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EDUCATING THE SOVIET ARMY OFFICER

Lieutenant Colonel Randall H. Bryant, *Infantry*
Instructor, Command and General Staff College

IN OLD Russia, the doors of the corps of cadets, the military schools, and the academies were tightly closed to workers and peasants. Military knowledge and military leadership were the monopoly of an exclusive caste. The corps of officers, especially the generals, was made up in the main of representatives of the gentry. In 1912, a large percentage of all Russian generals were members of the gentry, and the rest were scions of the upper middle class or of the clergy. Many generals and admirals belonged to titled European families, as princes, barons, and counts, of other than Russian descent.

Private soldiers were contemptuously referred to as "cattle" by their aristocratic officers. The private could not even dream of an officer's commission, no matter how capable. In the pre-revolutionary epoch, officers for the most part were promoted to higher ranks, not because they showed talent or had distinguished themselves in action, but because they had titles and money. The system which had existed in the times of Peter the Great and Suvorov, when officers' commissions were given to the most capable privates and non-commissioned officers, had long been forgotten.

The new Soviet general staff studied the weaknesses of the old Imperial Army. Discipline in the old army was such that a mass of men could be drilled in perfect formations, and it could make the formations appear, when led, like a precisely functioning mechanism. But few of the officers could read a map. Few officers had sufficient military knowledge to continue a skirmish on his own initiative. The educational level of the enlisted men was even lower. If an officer fell or was otherwise eliminated from the field of battle, his troops were lost.

Post-Revolutionary Period

During the years following the Revolution, attempts were made to remedy the above situation, but development of educational methods was slow and failed to follow a definite plan. The army, until it could grow together organically, had to undergo the same process as the rest of the country. Everything had to be built up on a new foundation, as Lenin and the revolutionaries were determined to destroy all traces of the old imperial regime, and they were initially unwilling to accept anything faintly resembling the Russian Imperial Army.

The establishment of a stable military system finally improved internal conditions of the Red Army, and a period of

World War II hastened the modernization of the extensive educational system of the Soviet Army, and in the postwar period the schools have been continued with increased professional and technical standards

far-reaching reforms was originated by Frunze, who rose from the ranks of the revolutionaries to become Trotsky's Commissar of Defense in 1924. During the next 3 years, Frunze greatly improved the officers' educational courses. The short-time command courses of the civil war era were supplanted by military schools with courses lasting from 2 to 4 years. The existing academies for higher military tactics were reorganized and enlarged, and new ones were created for the different branches of service. Thousands of the temporary civil war officers were sent to these schools for much needed training and refresher courses. The material conditions of the army were gradually bettered, while a new stress on discipline corrected the postwar laxity and enhanced the authority of the officers. Orders no longer had to be countersigned by political commissars, although these commissars were retained in the field for years as the authority on political education.

Throughout the whole army, but especially in the groups of officer cadres, class origin now played a decisive role. The majority of the old officers were mustered out, although over 4,000 were retained, many of whom were in high staff and command positions. To attain homogeneity in the army structure, cultural standards for officer candidates were temporarily lowered. This later had to be corrected due to the tremendous growth of the Soviet educational system.

Timoshenko's Reforms

In May 1940, the new Commissar of Defense, Marshal Timoshenko, inaugurated another period of reforms and drastic changes in training methods. The main reforms were toward improvement of tactical standards and leadership of the small units (platoons, companies, and battalions), and toward eradication of routine training methods, classroom instruction instead of field work, and excess paper work. Large-scale maneuvers were abandoned; they were replaced by tactical field exercises, using no units larger than a division.

World War II hastened the process of modernization of the educational system. The Soviet Army, lacking a Soviet tradition of sufficient depth to back up the efforts it was called on to make, invoked the military traditions of Czarist and pre-Czarist Russia. Generals, like Alexander Suvorov, who served under Catherine the Great, became legendary Soviet heroes. Guard units were created. More colorful uniforms, similar to those of the old Imperial Army, were adopted, with the same old shoulderboards. Army pay was adjusted to increase the differential between officers and enlisted men, and additional privileges were established.

Since World War II, the Soviet government has taken steps to increase the attractiveness of a postwar career for officers in the army. Once the symbol of despised Czarist oppression, the officers' corps has been gradually revived, and it now enjoys a firmly rooted authority based on the success it achieved during the war.

Officer's Life

In Russia, army officers are a privileged class in the literal sense of the word. Their privilege is not, as in many other countries, an irrational, immaterial sham, a glossed-over poverty, or a mere social glamor. All Soviet citizens are employees of the state. Among them, the officer is the best paid. But his pay is not the important thing, for even a well-paid Soviet citizen has a pretty difficult life. It is hard to find a place to live, to be properly clothed—in short, life is full of worries. The important point about the professional army officer is that he is relieved of all these cares. He has everything in his barracks (for everybody—even most generals—live in barracks). He has a comfortable apartment there; he is relatively well-clothed and fed; he participates in all kinds of

sports, educational facilities, and amusements. The officer is perhaps the only Soviet citizen who has no cares. All that the state expects in return is study. When duties are over, he must attend lectures, exercises, and seminars. If he wants to remain in the army, he must, every few years, pass an examination in some language or in a more intensive mastery of military science. He is also expected to increase his general knowledge constantly—this, of course, strictly within the framework of the dominant political faith.

The career of the professional officer is strictly prescribed. The privileges attached to a military career provide a wide and careful choice of candidates. Only the best high school students are eligible for the military schools, and these must, at the same time, be especially recommended by the Party. After 3 or 4 years training there, while almost cut off from the world (or, more correctly, in actual daily but closely controlled and supervised contact with it), they enter the army, are transferred to outlying garrisons of the vast Soviet area, and become completely swallowed by military life.

It is a peculiar accomplishment of Soviet organization that it leaves to the officer not a single minute of personal life, not even with his own family. For his family also lives in the barracks and is a member of that "family" which is the Soviet Army. As such, his family partakes of the communal living arrangements of the regiment and belongs to most of the clubs and social organizations of the troop units. This participation is officially a privilege, but in reality a duty. The officers' wives, even when they have their own professions, are given functions in the community life. Large congresses of commanders' wives are held in which these functions are discussed. They take an energetic part in military sport; commanders' wives have achieved records in shooting, skiing, and in cross-country rides.

The absorption of the officer's family into military life closes his last loophole to the outside world. He belongs entirely to the state. He is patriotic, but his is a singular patriotism, for it includes the ideal of world communism.

The military schools and academies are the pride of the Red Army. In equipment and training systems, they probably rank among the best in Europe.

Suvorov Military Schools

In 1943, a decree created the Suvorov Military Schools for the purpose of training army cadets. Originally, there were nine such schools provided for, in towns of regions liberated from the Germans, but by the end of the war there were 15 schools. These "Suvorovtsi," as the young cadets are called who successfully complete the 7 to 9 year course, are allowed to enter the military schools for army officers without taking the regular entrance examinations. The Suvorov Schools accept candidates between the ages of 8 and 13; however, the average age upon entrance is 10. The candidates are chosen from among the orphans of Red Army heroes and from sons of high officers and ranking party officials. A few older youths who distinguish themselves on their own are also admitted. The schools are not open to the general public. So great is their popularity that there are a hundred times as many candidates as can be accepted. They are boarding schools; the state furnishes everything, including the uniform of black, topped off with the special white crowned hat. The cadets live under strict military discipline. Uniforms are worn in classes and on the street, the day begins and ends with bugle calls, and the military forms of address are compulsory.

Red Star, the Soviet Army periodical, states, "the Suvorov Schools carry out the best traditions of the old cadet establishments, where many celebrated officers and generals of the Russian Army began their

careers. The curriculum also closely recalls the famous Tzarist cadet schools. Music, fencing, riding, dancing, physical culture, and drill are part of an enlarged curriculum." The directors of the Suvorov Schools are regular army major generals and the separate cadet companies are commanded by lieutenant colonels or majors.

In 1941, there were approximately 76 branch schools and now there are believed to be more than 100. The scope of their instruction appears to be a combination of our own branch schools and the United States Military Academy. These schools graduate annually about 10,000 new junior lieutenants after the successful completion of a 2-year course.

To qualify for attendance at these schools, the prospective student must have completed the tenth grade (high school in the USSR), must pass a mental and physical examination, must be unmarried and between the ages of 19 and 25. Any young man who aspires to a commission in the army may make application either to the commandant of the school he desires to attend or to the military commissar of his city or political district. If he is a noncommissioned officer in the army, he applies to his commanding officer. Upon graduation, he is sent to troop duty. From this point on, higher military education is by selection only. However, if he is ambitious, he may take extension courses from the correspondence branch of the school of his army. These are similar to our own extension courses.

The Branch Schools

After an officer has served with troops for at least 1 year and has been commissioned for at least 4 years, and before he passes his 35th birthday, he is eligible for selection to attend the academy of his branch. The courses at these academies represent a combination of those of our army advanced branch schools and the Command and General Staff College and are 3 to 5 years' duration. Graduates are assigned as commanders of battalions or regiments. At the beginning of the war, there were 16 schools in existence, but there are possibly two or three more by now. The academies not only train officers but also take an active part in research and development. They also publish arm and service journals, in which information on new tactical and technical developments is disseminated. As mentioned above, of particular importance is their function of conducting and supervising the correspondence courses for officers on active duty with troops. This has been of considerable significance in raising the standards of officers of the arms, large numbers of whom have received their training for higher command duties in such courses.

Among the branch schools are the Artillery Academy, which trains both line commanders and artillery experts; the Air Academy; the Military Engineering Academy; and the Stalin Military Academy of Motorization and Mechanization, which is one of the youngest of the branch schools. The latter was founded when the successes achieved in the industrialization of the Soviet Union made it possible to supply the Red Army with modern combat tanks and trucks of domestic manufacture. The Academy developed with the expansion of the Armored Force. Eighteen years ago, it had only two laboratories and those were poorly equipped. Today, it has 40 to 50 laboratories with excellent up-to-date equipment.

The Frunze Academy

The Frunze Academy is the oldest high-level military educational establishment of the USSR. Outstanding officers who have served from 4 to 6 years with front-line units of the Red Army, possess a secondary school education, and have a knowledge of either English, French, German, Polish, Japanese, or Persian are eligible for selection to the Frunze Academy. How-

ever, all candidates must pass an entrance examination. Officers sometimes spend several years preparing for these examinations, which cover tactics, Soviet Army regulations, topography, and general education. Candidates are given 1 to 2 months leave for final preparations for the examination. Preliminary examinations are usually given at the military district headquarters by Academy representatives, and papers are forwarded to Moscow for grading. Candidates take their final examination at the Academy, where they also must appear before a special commission which thoroughly examines their political background.

The course of the Frunze Academy may be compared to that given at our Command and General Staff College. However, it lasts from 2 to 3 years. Studies are pursued under the direction of various departments, such as the chemistry and physics, military history, tactics, general military education, and intelligence departments. The first year deals largely with the tactics and techniques of the various arms. This is supplemented during the summer months by field exercises. A very interesting fact is that the intelligence course lasts 3 years, whereas most of the others are only of 2 years duration.

The Frunze Academy is equipped with more than 100 laboratories and indoor ranges. The laboratories include equipment for the study of aviation, chemistry, artillery tactics, strategy, military history, mechanization, motorization, camouflage, electronics, searchlights, and hydro-technics. Indoor ranges include ranges for field artillery, antiaircraft artillery, machine guns, and aircraft armament.

Since World War II, all students have been participating in the conduct of research, assisted by the faculty. The lessons of World War II are analyzed and studied, and instruction is based largely on lessons learned in combat. The Academy has a special museum for the history of World War II which is displayed graphically. A series of bi-monthly conferences is conducted on major operations. The transition from defensive to offensive strategy and the pursuit, encirclement, and destruction of enemy forces, from the campaign of 1944, are being studied at these conferences.

The objective of the Academy is to prepare graduates for duty as division commanders and the staff of corps or higher units. After graduation from the Academy, the officer is assigned to field duty. If the officer displays unusual ability in military science, he may be selected to remain at the Academy for research work or duty with the faculty.

General Staff Academy

The highest school for officers of the Red Army is the General Staff Academy or the Voroshilov Higher Military Academy. This Academy prepares senior officers for duty as corps chiefs of staff or higher duty. Although there is no age limit for admission, young officers of exceptional ability usually are selected. The course lasts from 2 to 3 years, with 100 officers in each year's class. Another hundred officers attend special classes designed to improve the general and military education of the officers of the Soviet Army. Thus, 300 students are attending this Academy each year. The Voroshilov Higher Military Academy may be regarded as similar to our own National War College.

The curriculum is prescribed by the Chief of the General Staff, and it generally includes the tactical, operational, and strategic employment of large formations. The course of the special class is similar to that of the regular class with fewer theoretical problems and no field problems. The methods of instruction employed are individual and group solution of assigned problems, lectures, panel discussions, and field exercises. The field exercises are con-

ducted during the summer season. They consist of command reconnaissance of terrain; the tactical or operational decision of the commander; theoretical solutions of the resulting staff and logistical problems; and participation in command or staff functions during the fall exercises of the field units.

The candidates for the regular course must be graduates of the Frunze Academy and have at least 2 years' experience as commanders or staff officers of large units. The candidates for the special class need not be graduates of the Frunze Academy.

In addition to its regular instructional functions, the school conducts extensive research on military subjects. This research also results in the basis for articles published in the *Journal of Military Thought*, the journal of the Academy.

Conclusions

World War II has shown that the Soviet Army has large cadres of efficient commanders and leaders of men in the field. Many Soviet officers have been through the school of hard knocks in the past few years. Some fought in the Civil War and in the Finnish Campaign in 1939. Others—the overwhelming majority—received their baptism of fire on the battlefields in the war against the Germans.

Since the war, the Soviet Army's educational system is continuing to maintain and raise its professional and technical standards and is helping to overcome the effects of demobilization. It is easy to see that the system is organized on a basis unsurpassed by any other nation and that no signs of easing or letting up have been indicated.

It is essential that in our training we select men who possess within them the potentialities of leadership and, secondly, we develop those potentialities. This is best accomplished by giving the leader responsibility. The mere fact of responsibility will increase the leader's powers of decision and make him confident of his ability to handle any crisis.

Field Marshal Montgomery

Dec 1949

Our every action in training and in handling the young men from 18 years old and up must contribute to their development. For in this acid test between conflicting ideologies, it is going to take a better citizen and a stronger American to meet the constant and continuing attacks on democratic ideals and institutions.

General Omar N. Bradley

Korean Occupational Problems

Major G. Harry Huppert, *Infantry*
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The views expressed in this article are the author's and not those of the Department of Defense or the Command and General Staff College.—The Editor.

FOR almost 4 years, the United States Army occupied the liberated country of Korea. During this postwar period, innumerable political, economic, and social situations produced many unusual problems for military personnel.

A portrayal of some of these "not in the manual" problems may help prepare future commanders and staff officers to cope with similarly difficult circumstances.

To understand better the position in which the Army found itself during the Korean occupational period, let us first examine the country and its people.

The Hermit Kingdom

The 600-mile long and 200-mile wide Korean Peninsula, which juts out from the Asiatic mainland, is a rugged, mountainous land. A 4,000-foot mountain range forms the backbone of the northern and eastern sections. What few natural resources the country possesses are found in the northern sector. As the soil is not fertile, the vegetation is of the poorest quality. Cultivation of rice is the principal occupation. This commodity, produced mostly in the south, is the major food of the 30 million Korean people.

The history and culture of Korea goes back 4,000 years. However, for most of this time, Korea was subjugated by either Chinese war lords, Manchurian tribal hordes, or the Imperial Japanese forces. Each of these conquerors left their cultural imprint upon the dominated Korean people. Oriental scholars claim, nevertheless, that the peoples of Korea greatly assisted both China and Japan in the founding of many of their cultural traits. During their few hundred years of freedom, it is small wonder that these people excluded all outside influence. Actually, the Korean people have had very little opportunity to improve their impoverished plight or to learn enlightened ways of government, education, industry, economy, and, above all, democracy. It was one of the last oriental nations to attempt to absorb the modern concept of civilization.

The People

The average Korean is a happy, friendly, simple person. His greatest interest is not freedom and modern democracy; rather, it is whether he and his family will get

American troops went into Korea untrained and ill-prepared for the complex occupational problems which faced them. To avoid these difficulties in the future, officers must be trained in such duties

enough to eat. The vast majority are not personally interested in politics. They will quickly and blindly follow any strong type of leadership. Approximately 65 percent of the people are illiterate; less than 10 percent have been exposed to any education on the high school level. Only about one-half of 1 percent have received any college education whatsoever. The Korean people are interested in the outside world only as it affects them personally. The American occupation has opened a new window of light to them, but only a few have the intelligence and determination to receive it. The rest are satisfied as they are. A few well-educated individuals are striving to lead the country out of ignorance. Unfortunately, most of these individuals are attempting to gain what amounts to dictatorial powers.

Occupation

This was the country and these were the people introduced to the Army on its entrance into Korea. Following the Big Three Agreement (1944) for the joint occupation by the armed forces of the USSR and the United States, the 38° north parallel was selected as a temporary control line between the Soviet and American troops to facilitate the surrender of the Japanese Army in the "Land of the Morning Calm."

On 15 August 1945, XXIV Corps, then on Okinawa, was instructed to occupy Korea south of 38° North Latitude on or about 8 September. Adequate time could not be devoted to analyzing occupational problems inherent to such a mission. In short, the American Army entered Korea unprepared for their occupational role—quite in contrast with the Russians. The Red Army knew approximately 6 months in advance what units would occupy their portion of the country. Further, Soviet plans included the designation of units that would occupy specific towns in each of the northern provinces. For years, the Russians had been training selected Koreans in Moscow. Individual Russians had been educated to understand the Koreans, their standards of life, ideals, culture, and political history.

On 8 September 1945, the 7th Infantry Division landed at the west coast port of Inchon. As was expected, the landing operation was unopposed. This peaceful D-day was high-lighted by the release of some 150 American and British prisoners of war. The division quickly occupied the capital city of Seoul. On the 9th of September, the formal terms of surrender of the Japanese forces in Korea were signed by Lieutenant General John R. Hodge, Commanding General of XXIV Corps; Admiral T. C. Kincad, USN; and Lieutenant General Yokozuki, Imperial Japanese Army. On or about 25 September, the 40th Infantry Division landed and took over the southern portion of the United States occupation zone. During the latter part of October, the 6th Infantry Division arrived and assumed its occupational duties. Soon thereafter, the 40th Division was inactivated, but the 6th and 7th Divisions remained until January 1949 when they were transferred to Japan.

During the initial occupation phase, the Korean people joyously greeted the American troops. For the first 2 weeks of liberation, a tremendous holiday spirit prevailed, and it was necessary for the American command to request the people to return to work. As time went on, the natives accepted the presence of American troops as a matter of course. It was considered by all concerned, Army personnel and Koreans alike, that the occupation would be terminated quickly, as the Koreans planned to assume control of their own country. Due to the intransigent Soviet attitude, complete independence is yet to be realized.

The Political Picture

A constant source of concern was the Korean political situation. Initially, there

were two major factions—one within the country and a provincial government in exile.

Soon after the announcement of the cessation of hostilities, a so-called Korean patriot, Lyuh, Woon Hyung (in Korea the surname is written before the given name), informed the Japanese Governor General in Korea that he, in the name of the Korean people, was assuming control. To his surprise, his many demands were agreed to by the defeated Nipponese official. On the 8th or 9th of September, Lyuh contrived to meet the American command and, after politely bowing three times, informed them that he was prepared to assume the leadership of all Korea with his "New Peoples Party." Rapid United States investigation disclosed that Lyuh, his daughter, and brother had received a communistic education in Moscow and that his "New Peoples Party" had been organized in Russia during the fall of 1944.

The Army quickly dissolved, at least on paper, this aspiring organization with the reported statement: "There is only one government in South Korea—the United States Army Military Government." However, this did not stop Lyuh, Woon Hyung, his brother, Lyuh, Woon Hong and other communist leaders Pak, Heun Yung and Hu, Hun from forming, with Russian assistance, the ever-present leftist organization, the South Korean Labor Party. Lyuh, Woon Hyung continued to dominate southern communist activities until he was assassinated in Seoul on 19 July 1947.

On the other side of the fence was the "Korean Government in Exile." This organization had been formed in China by two self-styled Korean martyrs, Dr. Rhee, Syngman, American educated Korean diplomat, and tall, gaunt, bespectacled Kim, Koo. Dr. Rhee spent most of his time in the United States during the hated Japanese reign, while Kim worked for liberation in China. On 10 November 1945, Kim announced from Shanghai that he and Dr. Rhee were returning to their native land to lead their people toward western civilization and recognition by the great powers.

Upon arrival, they were joined by two other Korean patriots, Ahn, Jai Hong and Kimm, Kyu Sik. These four persons, all with strong individual personalities and political aspirations, were able to mold the majority of the South Korean people into a strong right-wing pro-American party.

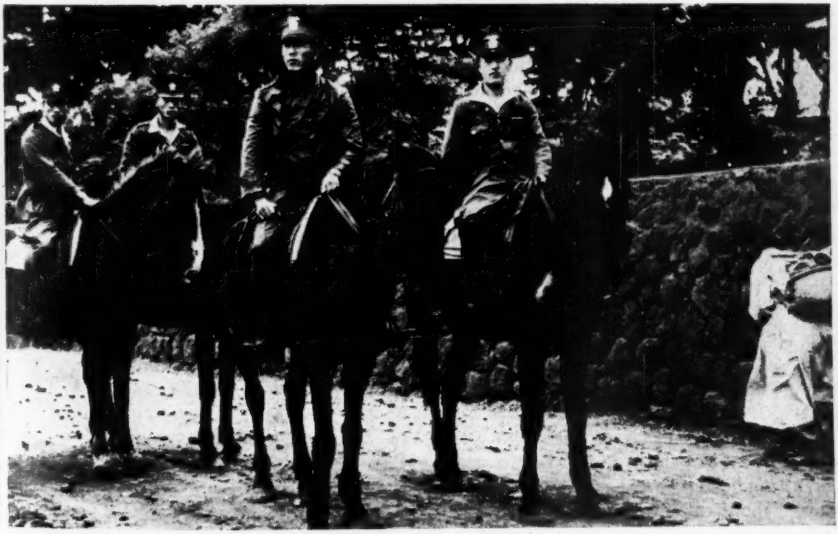
The American command quickly realized that they could not accomplish their mission of forming a Korean government if the people of South Korea could not be united politically. Kimm, Kyu Sik was requested to establish a middle-of-the-road coalition government that would be satisfactory to all parties. Due to the Soviet domination of the minority left wing, this move failed, and Kimm's political star was dimmed. Dr. Rhee gained in stature and became South Korea's leading figure.

In the summer of 1947, Rhee made a political trip to the United States. While he was away, Kim, Koo, the Doctor's "trusted" assistant, attempted to assume complete control of the right wing. He was unsuccessful and was forced to form his own party in a face-saving effort. Kim was assassinated, reportedly by a member of his own party, in June 1949. During the fall of 1947 and spring of 1948, every Korean political leader was maneuvering in different directions. To alleviate this situation, Ahn, Jai Hong, an ardent supporter of the United States Army Military Government, attempted another coalition, but this move was not received with any degree of enthusiasm by either of the two major right-wing parties or the communists.

As an illustration of the complexity of Korean politics, it was ascertained at one time during the occupation that there were approximately 72 rightists parties in South Korea. The Army found itself confronted with a political situation consisting of a

Nearly four thousand years of subjugation have retarded Korean development. Above, two farmers transplant rice, the cultivation of which is the principal occupation in South Korea. Below, left, two Koreans demonstrate a primitive method of shoeing an ox. Below, right, a young Korean makes straw rope with primitive machinery.—US Army photos.

American occupation forces remain in South Korea while local security forces are trained to protect the newly liberated nation. Above, a company of Korean soldiers from the Kungnung garrison, singing as they march. Below, a group of mounted officers of the new South Korean National Army.—US Army photos.



strong right-wing divided against itself and opposed by a Russian sponsored and controlled leftist party. It was only by diplomacy and statesmanship on the part of many Americans that the right wing was finally reunited under Dr. Rhee just before the election supervised by the United Nations in May 1948. Dr. Rhee is now the president of the divided nation.

The Russian Stalemate

To complicate further the already muddy waters was the constant provocation of the Russians north of the 38° parallel. It became apparent early that the Russians intended to make the line of demarcation a definite barrier between northern and southern Korea. In December 1945, it was decided to convene a US-USSR Joint Commission in an attempt to resolve occupational difficulties. At this conference, a 5-year plan of governmental and economic guidance for Korea was agreed upon under the title "Trusteeship."

It is interesting to recall the Korean reaction to this trusteeship clause. This term implied only one thing to the people, a continuation of foreign domination. A great, spontaneous, mass demonstration by all parties was held in Seoul, the capital of South Korea. Just after the demonstration started, the Red left wing received word that the Russians favored trusteeship. The communists quickly withdrew from the non-partisan demonstration, reworded their signs and banners, and organized their own "we favor trusteeship" parade.

All explanations to the Koreans concerning the word "trusteeship" were futile. They would not accept the true concept of this clause as interpreted by the Americans. Its incorrect interpretation by the Koreans was the root of considerable misunderstanding and difficulty.

At the first session of the Joint Commission (1946) held in Seoul, the Russians would not agree to consultation with any Korean political party that did not favor trusteeship. This meant that only the Soviet-inspired, leftist South Korean Labor Party would be given representation in any newly formed government. The United States command would not, and could not, abide by this doctrine, as under the Soviet demands only a very small minority would be allowed a voice in the government. Therefore, the first Joint Commission failed. The second session of the commission convened in the spring of 1947. Again, the same situation prevailed. When the United Nations Commission came to Korea in an attempt to settle this international problem, the Russians would not allow them entrance into North Korea. Because of this, the country still remains divided.

During both of these US-USSR meetings, especially the second, the Russian delegation in South Korea furthered communistic activities in the American zone of occupation. The billets of the USSR Delegation and the Russian Legation were constantly the scene of midnight political intrigue. The South Korean communist leaders received instructions, ideas, and plans from their Russian associates—this, despite the fact that the Russians were supposedly in South Korea to assist in the formation of a unified Korean government. Actually, they were doing everything in their power to prevent it.

To add to this political confusion, the Soviet-enforced 38° parallel barrier placed an unnatural and unsolvable economic burden on the Korean nation. Raw materials found in the north were required for the daily operation of public utilities and industry in the south. Likewise, the rice cultivated in the south was sorely needed by the people of the non-agricultural north. The Russian-dominated north produced and controlled at least 60 percent of the electrical power. This power was needed by the south to maintain its industry. Normal trade did not exist between the two sections, due to Russian insistence on the continuation of their worldwide

"Iron Curtain." The 38° parallel had become an armed barrier across which no person could safely cross.

Military Government

Only against this background can we understand the difficulties inherent to establishing military government in Korea.

The first troops assigned to military government duties came from an antiaircraft artillery unit stationed on Okinawa. These troops became the nucleus of United States Army Military Government in Korea. Without prior knowledge of, and untrained in, the intricate details of administering and overseeing governmental, economic, social, and political functions, these combat-trained officers and men did the very best they could. A preliminary estimate of the military government situation showed the magnitude of their pressing duties. To cope with existing problems, additional personnel were required to augment the initial troop units. This augmentation was accomplished by assigning other combat-trained individuals to the supervision of many non-tactical functions.

Officers and men who had been trained for years in military duties with the major mission of protecting the United States homeland and defeating any aggressor, suddenly found themselves removed from combat units. A month before, these soldiers had been engaged in battle with the Japanese. They were placed, without any training, in charge of the electric company, the streetcar system, the forming of a public safety organization, the reestablishment of hospitals, the operation of the railway system, the reorganization of the commerce department, and a host of industries.

There has been considerable criticism of the performance of our military government in Korea by many individuals and groups in the United States. It is hard to understand how anyone who has never been in Korea and is not familiar with the situation could write or discuss the many varied and peculiar problems encountered. Therefore, it is difficult to believe that these individuals and groups 8,000 miles away, who complained bitterly about the failure of military government in Korea, could have done any better.

The language barrier was a real stumbling block. The Army had some Japanese interpreters but very few Koreans. It was necessary to inform the Korean people what to do and, in most cases, how to do it. Therefore, the Koreans who could speak English were selected by military government as the individuals who were to be trained to assume economic control of their country. It is understandable that some of these Koreans were not the best-qualified persons for the various tasks to which they were assigned. Because of this, military government became known as "The Interpreters' Government."

Another complicating factor arose from the fact that the Japanese had imported into Korea all the skilled laborers, technicians, foremen, supervisors, planners, and advisers from Japan. Most Koreans had been employed just as common laborers or unimportant clerks. They had never been allowed by the Japanese to assume a place or position of responsibility. This situation existed for 40 years before our liberation of the country.

Anticipating these and other difficulties, the Army, early in the war, recognized the need for training occupational experts. Military government schools were established, but, in some cases, personnel were improperly assigned to such schools. To further complicate matters, many of these specially trained individuals were returned to the Zone of Interior just when their specialty was needed the most. Officers who were trained after VJ-day at the Military Government School, Carlisle Barracks, Pennsylvania, received practically no assistance or guidance in their future duties. Many of these Carlisle graduates

arrived in Korea totally unprepared to assume the serious responsibilities of assisting in the formation of a new government. However, once on the scene of operation, almost everyone did his best, constantly improving the situation by the trial and error method.

If We Must Do It Again

The lessons learned from the occupation of Korea should be enlightening and beneficial to the Armed Forces and the United States government. We must not allow these lessons, learned the hard way, to be forgotten. If we are again forced to perform occupational duties, preparations must be made to ensure that some of our unfortunate occupational difficulties will not be needlessly repeated.

Many occupational problems in Korea were solved by hard work, long hours, constant effort in the face of difficult circumstances, and a system of trial and error. They could have been solved more easily and efficiently if definite policies and plans had been established before actual occupation. Included in these plans should have been the vital requisite for trained personnel. If we had had these policies, plans, and skilled individuals, many of the unsolved problems could have been met in stride.

From this analysis of the Korean occupational problems, the following conclusions are presented:

1. The State Department and the Department of Defense should, at an early date, commence the formulation of long-range occupational policies. This planning should include the establishment of definite policies and doctrine so that the Armed Forces will be able to properly prepare for any occupational mission.

2. The Department of Defense should institute a long-range educational program for selected Armed Forces officers in geopolitics. This program should give careful consideration to the selection of the individuals for this important task. The very few officers who may be receiving this type of training will not be able to shoulder the burden in the event of future occupation. The officers selected should receive detailed instruction regarding the plans and policies of our government, including our aims regarding the occupation of both liberated and occupied nations. These officers should study the government, the people, and the topography of all possible occupation targets. Further, and most important, these "military minds" should devote the major portion of their careers toward the possible establishment of military government in various countries. Their ability should be used in the formation of policy, doctrine, and plans.

3. As the Army member of the Armed Forces team will likely shoulder a considerable portion of any future occupational burden, the Army should institute an educational program for all officers in occupational responsibilities and duties. This program should include general training in the field of governmental functions. All officers participating in this program should have a general knowledge of foreign countries, their history and culture, their people, their government, and their customs. Such a program, properly coordinated, could be instituted in our service schools' system, being taught progressively as we teach military science and tactics. Experience in our present worldwide occupation could materially assist in such a program.

We have learned from experience that most plans, hastily conceived, are costly, both in men and money. Therefore, we should prepare for the future now. We know that occupation is a major consideration in the aftermath of war. Now is the time to prepare for this difficult task. It is too late to commence after war has been declared. The Army has always been well-trained to win wars. In the future, we must be as well-trained to win the peace.

The Military Foundations of Peace

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AMERICAN foreign policy seeks a durable peace and a stable world order. Realistic thinking agrees that this objective is surrounded on every side by military considerations.

The influence of military factors on world politics can not be realized without first considering the bleak history of warfare. There have been innumerable wars since recorded time. Since the rise of modern culture, wars have grown astronomically in violence and intensity. By every index, wars have increased in magnitude, and by every standard, the terrifying tax paid to Mars becomes more unbearable. In our twentieth century of progress, we have already fought twelve times as many battles as occurred during the ghastly 30 Years War. The actual duration of battles has increased from hours to weeks and months. The number of men engaged in conflict has expanded consistently. Proportional advances can be found in the number of men mobilized, fatalities, and per capita cost.

War is peculiarly a matter of vital concern to the Great Powers. Its major burdens have been increasingly borne by them. The Great Powers paid 90 percent of the world's armament bill in 1937 as well as most of the admission fee to the 1939-1945 hostilities. The Great Powers have been engaged in almost every battle fought in modern times. As a matter of fact, the Great Powers have become great by war and have maintained their position and influence only through resort to war. Up to the present time, history reveals that the decline and eclipse of a great power occurs when the nation in question grows pacifistic and refuses to defend its interests.

In the face of this trend stands the possibility that future war may sound the death knell for victor and vanquished alike. The contention is advanced by many that the very survival of our civilization depends upon humanity finding a method of eliminating war as the final instrument of international dispute.

If one looks objectively at the ascending curve of war frequency and the current allocation of treasure for military purposes, the chances of a permanent peace seem slim indeed. This deduction would be reinforced by two other disturbing characteristics of the world scene. First is the acknowledged and sharp ideological cleavage between East and West. There is scarcely a daily paper which does not carry some story of the conflict between these systems. To this situation, it seems appro-

In this article, the case is made that the chance to prove that right makes might depends on America's military strength and her ability to absorb initial blows, recover, and strike back to ultimate victory

priate to apply this observation of Justice Oliver Wendell Holmes: "Between two groups that want to make inconsistent kinds of worlds, I see no remedy except force."

Equally disturbing to the cause of peace is the shift in world power relations so that only the United States and Russia contain within their immediate spheres sufficient strength to wage modern war. Both of these titanic powers are compelled by the nature of separate sovereign existence to observe each other's conduct with discreet and watchful eyes. The United States and the Soviet Union stride the modern power heap in a manner reminiscent of the ancient rivalry between Carthage and Rome. The known Mediterranean world was too small for both those powers. For this reason, some have alleged that the present world, stripped of the buffer service rendered by four or five now defunct powers, will be consolidated by force.

Fortunately, the picture can not be presented so simply. It is a fact that an ideologically split, bi-power world has rumbled on for several years without resorting to the violent form of conflict called war. On the other hand, few have been so rash as to describe the volcano on which the world is so precariously resting as a nesting ground for the dove of peace.

War weariness has been offered as the explanation for the truce we so anxiously enjoy. Doubtless, it plays a significant role in restraining conflict, but a deeper insight into the present absence of war can be found in the celebrated dictum of Clausewitz that "war is a continuation of policy." The policies of separate states, even the most peaceful, are always in some degree of conflict, and war is only the violent expression of conflict between diametrically opposite policies. From this point of view, which history substantiates, there never has been a peaceful period. There have been less warlike times and periods more warlike, but the underlying relationship between peoples has always been one of competition and conflict. Thus far, history reveals that the causes of war have been a permanent condition of human life. Rivalry over a wide variety of issues has always split the world into numerous opposing camps.

Aggressive governments have exploited this rivalry as the basis for war whenever it suited their policies. In a clash of policies, some governments seek to maintain their position. Others strive to advance their power position according to the dominant interest of the day, be it religious, economic, or ideological. Governments which pursue expanding policies are the aggressive governments. All governments, good, bad, or indifferent, have one trait in common; they are formed of men who desire and enjoy power. No timid, retiring violet ever became president, or dictator, or prime minister. The individuals who head governments have a power urge. Since the desires of the aggressor can be realized only at the expense of other governments, demands which require a diminution in national prestige and importance have never been accepted without the use or threat of force.

The expansionist policies of power-seeking men, fortified by their egoism, have been the basic cause of war. Actual wars are fought over concrete issues which mask the real reasons for their appearance. Warlike periods generally coincide with periods of great change, or to use the Russian expression, in times of trouble. In the modern era, the aggressor has evoked war either to destroy the balance of power or to export his domestic policies for foreign consumption.

Covering and obscuring the underlying causes of war is the minor detail of incidents. Incidents are really of little importance. Enough incidents have occurred

during the last several years to have started a hundred wars during the reign of old style diplomacy. Similarly, incidents will occur or can be manufactured to provide the overt cause for any future war.

If the causes of war are permanent, and if incidents are frequent, why do particular wars break out when they do? The correct answer to this question is that wars never break out. Instead, wars are made. Wars are made by some ambitious, aggressive ruler, whenever general conditions lead him to believe he can advance his interests by war. A potential aggressor seeks a favorable opportunity, such as a political split between his prospective opponents or the acquisition of some knockout weapon which he believes will guarantee him victory.

It is a historical fact that no aggressor ever started a war which he thought he was going to lose. The aggressor enters war to gain more power, not to lose what he already has. Many nations, in self defense, have accepted war thrust upon them, knowing defeat to be inevitable, but no country has taken up the aggressor's sword without the firm conviction that it would be victorious. Every aggressor, down to and including Hitler and Tojo, has made war only after a careful analysis of the general military situation. The general staff of a potential aggressor constantly surveys the military strength of his intended victims. When these victims let their guard down, a new war takes its place in the history books.

The aggressor's military estimate need not necessarily be correct. His general staff may make a faulty analysis of a complicated military situation, as Hitler's and Tojo's evidently did. But their mistakes are beside the point. What is important to remember is that, rightly or wrongly, the aggressor willfully undertakes to make war only when he is convinced that he can win.

This fact, so boldly written in the pages of history, may enable America to lead the world to peace. The enormous cost and the immense resources which modern war demands permit the few remaining Great Powers to establish within the United Nations a reign of international law to which the lesser states must subscribe. Disputes between the lesser states can thus be arbitrated. Wars between the lesser states and the Great Powers are likewise unthinkable. The only danger to the peace of the world lies in the fact that there is no authority on earth which can force the major powers to settle their disputes except the mutual respect they have for each other's strength. Every experienced observer has commented upon the unconcealed admiration the Soviet leaders have for power. History has thrown the United States and the Soviet Union to the summit of world power simultaneously. Serious differences exist between these nations. These differences lead some Americans to consider Russia as a potential aggressor. Need this fear lead to war?

The untold calamity of such a war can be prevented if the United States will continue to maintain sufficient military strength to convince the Soviet General Staff that war against us would be futile. If this strength were maintained for a sufficiently long time, ways might be found to settle some of the apparently insoluble difficulties that exist between us. Until the hope of a successful major war is eradicated from any possible aggressor's mind, the world may have to continue to put up with recriminations and name calling. But there will be little likelihood of overt war as long as our peace loving nation can flex a bigger muscle than any potential trouble maker. Common sense teaches that no weaker person picks a fight with a Joe Louis either in the boxing ring or in the larger arena of international affairs.

The military path to peace boils down

to this: Prevent any potentially hostile nation's general staff from ever making an estimate that the United States could be defeated. The United States can walk this path toward peace only if it is willing to maintain in time of peace forces capable of countering the blows of any possible aggressor. Our burden can be made easier if we can maintain an unbreakable association with like-minded nations—if possible, within the structure of the United Nations.

In the past, the American peacetime willingness to protect this nation has never been impressive. Until recently, our intellectual leaders have turned away from the military problems of defense in a manner reminiscent of the fabled ostrich. The opinions of American military men have been ignored. As a result, our defense measures have alternated between periods of total unpreparedness and times of frenzied and wasteful purchase of military might.

In 1937, 4 years after Hitler announced his plans of aggression, we had proportionately fewer men under arms than the 100,000 men which were authorized a disarmed Germany by the treaty of Versailles. That same year, the cost of our military establishment, including benefits being paid to World War I veterans, amounted to 1 percent of our national income. At the same time, the other Great Powers were expending 10 percent of their respective national incomes in preparations for war.

Under the special conditions of the immediate postwar period, a higher percentage of the American national income has been earmarked for military purposes. The military return of this appropriation has been considerably lessened by occupation and other non-military items charged to defense.

The USSR has been spending for military purposes approximately the same absolute amount as the United States. The military value of the Soviet expenditure has been increased by the low pay scales established for the ranks of the Red Army and the absence of occupation costs which have trimmed the other military items in our own budget.

If nations of approximately equal strength remain equal, there is no possibility of war breaking out between them. But if one of these nations invests, over a span of years, several times as much of its entire national effort into military forces as the other, a great disparity in strength will inevitably develop. Similarly, if one nation demands that all of its citizens be trained for war while the other relies on the inducement of decent pay to attract men into its Armed Forces, these two nations will pull further and further apart in relative strength. Somewhere along this easily discernible line, one power will become immensely strong in comparison with the other. If the stronger power happens to be pursuing aggressive policies, the fatal hour will come when its general staff will decide that a military victory over its rival lays within its grasp. If we ever permit this hour to arrive, the responsibility for war can be charged to American inability to read and react to history.

Eternal vigilance is the price of peace, more so now than ever before. To objective thinkers, a realistic program of matching strength to strength in order to guarantee peace makes sense. Yet, there are dangers to such a program. Unless we pursue it prudently, we face the possibility of an arms race which might be instrumental in forcing a war which our security measures are designed to prevent.

This vicious circle can be broken if the United States pledges to use its armed force for the only rational and moral purpose for which any force can be used: self defense. Power allied to moral purpose has never menaced society. In personal affairs, self defense is the first rule of life. In these affairs, a body of law has

established the rule that the individual who commits the first overt act against another in a dispute is the aggressor. Mere preparation or mere words and threats never comprise assault—only the actual deed of violence does. If this simple test could be applied to international disputes, there would be chance of a durable peace.

A statement that American forces would never commit the first overt military act would cut the feet from those individuals who contend that necessary American military power is a challenge to world peace and is the main inspiration of the vast Soviet armaments. The United States is preeminently suited for waging a struggle for peace by renouncing aggression. The fact that our government operates within restricted constitutional powers would insure that a renunciation on our part of aggressive war would receive the enthusiastic and sincere support of peoples everywhere.

Such a declaration of national policy would contribute a refreshing moral advance to the confused standards of international conduct. It would be a clear refutation of those in our midst who have lost their sense of balance under the pressure of continuing world crisis. Overawed by the atomic bomb, frightened by the possibility of other novel forms of warfare, and fearful of threats against the United States, some of our citizens plead that the United States consider preventive war. These people reason that, because of the power of modern weapons, the next war will be won by the side that strikes first. This they advocate we do. Needless to say, acceptance of this scheme would speed the world along to that barbarism we hope to avoid. Hostile intent, our ostensible basis for fighting, could never be proved by our own moral standards, no matter what threats we receive. If such a preventive war brought us victory, the United States would stand before the world as a power-crazed giant, its title to global leadership irretrievably lost.

A policy of peace through American strength does not imply military isolation. Isolationism, if carried to its logical conclusion, would reduce the United States to a strategically indefensible position. It is important to realize that the defense of America embraces not only the defense of the land beneath our flag but also the defense of the idea that people who want to have a right to live in freedom.

The advent of modern weapons of destruction places a unique burden upon the people of the United States. Peace cannot succeed unless we continuously demonstrate the utmost determination to defend ourselves. Our planning for peace must not imply that we will loose an unwanted war.

The present period of international chaos may last indefinitely, boring more and more deeply into our nerves, our pocketbooks, and our good sense. We face the prospect of being the first target on some future warmaker's schedule. Despite the nature of modern weapons, the initial defense of an adequately prepared nation is not and will not be an impossibility. The last realizable chance to prove that right makes might in this world depends upon America's ability to absorb initial blows, to recover, and to strike back for ultimate victory. This proposed pathway to peace will be both difficult and exasperating, but it has the advantage of being the only one that can take us to our destination.

American and Allied Strategy in the Far East

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This article is abridged from a chapter with the same title in Dr. Morton's forthcoming book, The Fall of the Philippines, *in the series,* The U. S. Army in World War II. *Copyright 1949 by Orlando Ward; permission for reproduction may be obtained on request from the Chief, Historical Division, Special Staff, United States Army, Department of the Army, The Pentagon, Washington 25, D. C.—The Editor.*

The *Orange* Plan

THE defeat of Germany in World War I and the postwar treaties altered fundamentally the problem of the defense of the Philippines and America's strategic position in the Far East.

The mandate to Japan of the German islands in the Central Pacific gave that nation numerous bases which lay astride the United States Fleet's line of communication. This fact, coupled with the development of aviation, made it necessary to capture or neutralize Japan's bases in the mandated islands before American forces could be sent to the Far East.

Aside from these changes, the peacetime strength of the US Fleet relative to that of Japan so declined following the Washington Treaties of 1922 that it was doubtful if it could have met the latter on equal terms in the Western Pacific. But there was no weakening of America's determination to retain the Philippines, or to withdraw naval and military forces, "leaving the Islands a prey to any powerful nation coveting their rich soil and potential commercial advantages."

The changed situation in the Pacific after 1920 was effectively presented in December 1921 by the War Plans Division of the Army's General Staff. The Army planners argued that Japan's desire for expansion and her ambition to dominate the Far East ran counter to the interests and established policy of the United States. Unless either or both countries indicated a willingness to give way, this conflict of interests was certain, sooner or later, to produce a situation that could not be adjusted except by force. They urged, therefore, that a war plan be prepared for such a contingency.

The Joint Planning Committee of the Joint Board of the Army and Navy, after studying for over a year the Army's estimate of December 1921, recommended that a war plan be prepared. The committee pointed out that a war with Japan would be primarily naval in character, and that the aim of the United States should be to isolate the enemy by control of his vital sea communications and by offensive sea and air operations. To accomplish this objective, the joint planners stated, the United States must secure naval superiority in the Western Pacific. Since the best available base west of Pearl Harbor for a large naval force was at Manila Bay, it would be essential in case of war to hold it and deny its use to the enemy. The Philippine garrison should, therefore, be pre-

pared to maintain its positions until the War Department could send reinforcements in sufficient strength to maintain the hold of the United States on Manila Bay. The Joint Board approved the estimate of its planning committee and recommended the preparation of a basic plan to be followed in case of a war in the Pacific.

First *Orange* Plan

War Plan *Orange*, the Joint US Army and Navy plan for war in the Pacific, with Japan as the probable enemy, was completed and approved by the Joint Board and Secretary of the Navy in August 1924 and by the Secretary of War on 3 September 1924, almost 3 years after the idea was first advanced by the Army planners. The general concept of operations embodied in the plan was essentially that which had been stated in the study made by the Joint Planning Committee. The United States, the *Orange* plan stated, would conduct "an offensive war, primarily naval, directed toward the isolation and harassment of Japan, through control of her vital sea communications and through offensive sea and air operations against her naval forces and economic life, followed, if necessary, by such further action as may be required to win the war." The first concern of the United States and the initial mission of the Army and Navy in a war with Japan would be to establish sea power in the Western Pacific "in strength superior to that of Japan." Such action, as the Joint Committee had pointed out, would require the establishment of a "main outlying base" in that area. Manila Bay was considered as the best location for such a base.

The mission of the War Department under War Plan *Orange* was to provide all Army forces and supplies required. Possible theaters of operations in a war with Japan would include the Continental United States, the Canal Zone, the Hawaiian Islands, the Marshall and Caroline Islands, Guam, the island of Luzon in the Philippines, and Japanese home territory.

On the basis of the existing mobilization plan, the Army was to make available 30 days after D-day 15,000 men for such islands in the Pacific as it was decided to seize and hold. By that time, troops required for raising the garrisons of Oahu and Panama to war strength would be available on the east and west coasts of the United States. To reinforce the Philippines, one Army Corps of 50,000 men, in addition to the other troops already mentioned, was to be ready to sail from the West Coast in time to reach Oahu 10 days after the opening of hostilities. Four days later, these reinforcements would sail for the Philippines. Supplies for this force were to be stored in the Philippines during peacetime. It was not considered practicable to build up the local defense of the Philippine Islands to a strength sufficient to hold out against a determined attack by Japan for an indefinite period without relief from the United States.

National policy prior to World War II dictated that the US defend the Philippines, but in the best opinion of military advisers the Islands were indefensible with existing naval and military forces

To execute such a plan was far beyond the capacities of either the Navy or the Army in 1925. The entire military establishment in the Islands did not number more than 15,000 men. Neither the base at Cavite nor Olongapo was equipped for more than minor repairs, and neither was adequate for the maintenance of a large fleet. Moreover, the US Fleet was divided be-

tween the Atlantic and Pacific Oceans, and the nearest US Fleet base even partially capable of supporting major vessels was at Pearl Harbor. While Pearl Harbor was strategically located to defend the west coast of the United States and, with Samoa, the Panama Canal, it could offer little protection to the Philippines 5,000 miles away. From Japan's southernmost naval bases, only 1,500 miles distant, an expeditionary force could reach Manila in 3 days, overcome the "insignificant or non-existent" shore defenses, and "make itself absolute master of Luzon."

Revision of Plan

Between 1925 and 1938, the *Orange* plan was revised many times, and commanders in the field made their own plans based upon the assumptions in this plan. An important factor in these revisions was the conviction, which had been growing among many Army planners since the end of World War I, that the Philippine Islands were indefensible and a military liability. This view was based on many factors: the development of air power, Japan's possession of the mandated islands and control of the line of communications across the Pacific, the failure to carry out the early plans for the construction of a naval base at Cavite, and the weakness of the US Fleet.

"To carry out the present *Orange* plan," the commander of the harbor defenses of Manila and Subic Bays wrote in 1933, "with the provisions for the early dispatch of our fleet to Philippine waters, it would be literally an act of madness." This statement takes on an added significance from the fact that its author, Stanley D. Embick, now a brigadier general, was the same officer who, with Colonel F. V. Abbott had originally established the fortifications of Corregidor. General Embick by now had become one of the strongest advocates of abandoning the Philippines if the United States was unwilling to expend large sums in its defense. Corregidor, he admitted, could probably withstand attack for about a year. But the defense of Corregidor was designed only to deny to the naval vessels of an enemy the use of Manila Bay. Its possession could not ensure the US Fleet a sheltered harbor in which to overhaul and repair major fleet units as long as an enemy could command the waters of Manila Bay from the land side. The Army's defenses in the Philippines were not strong enough to prevent a determined and aggressive enemy from reaching Manila by land in a short time and denying the use of the Bay to the American fleet. The best that could be hoped for in the event of war with Japan, General Embick felt, was that "wise counsels would prevail," and that the American people would acquiesce in the temporary loss of the Philippines until such time—2 or 3 years—as the fleet could return to Far Eastern waters.

Since the question of granting independence to the Philippine Islands was then being widely considered in the United States, and there was little likelihood of increasing the expenditures for their defense, Embick's views found ready support. The commander of the Philippine Department, Major General E. E. Booth, endorsed General Embick's views. He pointed out to the War Department that the enemy could be expected to attack without warning and that a plan of defense had to be based on the existing peacetime military organization. "Corregidor," he stated, "can resist invasion as long as food and ammunition hold out, but the Manila and Cavite areas would fall with little if any resistance." But what was the reason for the defense of Corregidor, he asked? The answer was implicit in the question. Since it could not be used by the US Fleet if the enemy controlled the land area around Manila Bay, the sole purpose of defending Corregidor, General Booth concluded, "is to keep the American Flag flying." He

therefore recommended, with General Embick, that the United States "arrange for the neutralization of the Philippines, withdraw our military garrisons and naval shore establishments from the Philippines and China, and adopt the line Alaska—Oahu—Panama as our strategic peacetime frontier in the Pacific. . . ."

On the basis of these recommendations, the War Plans Division of the General Staff recommended to the Chief of Staff that, if the concurrence of the State Department could be obtained, the troops in China be withdrawn, and that the *Orange* plan be reviewed by the Joint Board. The withdrawal of United States forces from the Philippines, which was clearly a political question to be decided by the President and Congress, was never considered by the War Department or the Joint Board.

Dissatisfaction with the existing plan did not end with this proposal. In March 1934, when the Tydings-McDuffie Act was passed, the Army and Navy commanders in the Philippines presented a joint letter to their respective departments. They argued that, in view of the reductions in military and naval strength in the Philippine area, it was impossible for them to carry out their assigned missions. National policy with regard to the Philippines, they felt, was not clear and they asked for a definite statement on which to base their plans. If the United States intended to defend the Islands whether or not they were granted their independence, then the naval and land forces should be increased, and an adequate base be built in the area. Treaties prohibiting such construction,—i.e., The Five Power Naval Treaty of 1922, should be abrogated. If the United States intended to withdraw its forces and voluntarily relinquish its control over the Philippines and responsibility for their defense, then only such forces should be retained in the Islands as would be required to maintain internal order during the transition period leading to independence.

This letter, with General Embick's memorandum and General Booth's indorsement, led to a re-examination of defense plans for the Philippines. The Army planners opposed the reduction of military strength to the Islands pending the final grant of independence and wished to maintain the fortifications there in "as high a state of efficiency as is practicable." In his instructions to the Army members of the Joint Planning Committee of the Joint Board, Brigadier General C. R. Kilbourne, Chief of the War Plans Division, stated that joint plans contemplated that the Army in the Philippines should be reinforced promptly in case of war and that such reinforcements would be convoyed by naval forces. About 2 years earlier, he recalled, the Chief of Naval Operations and the Chief of Staff had discussed this question with the President who had stated that "he was pleased to learn of a plan which promised the successful holding of the Philippine Islands in the event of war."

General Kilbourne felt that the existing force in the Philippines was still sufficient "to give reasonable assurance that Manila Bay can be held if reinforcements are sent as contemplated." The War Department view, he said, was that the joint letter should be disapproved, and that the Asiatic Fleet should carry out its mission. If the Navy Department felt that it was impossible to convoy reinforcements promptly to the Philippines and undertake immediately operations in the Western Pacific, and this was really the important question, then the mission of the commander of the Philippine Department would have to be changed.

Apparently, the Navy still felt that it could perform its mission, for the Joint Board recommended that the proposals of the army and navy commanders in the Philippines be disapproved, and that the mission of the army forces remain unchanged.

It did state, however, that the forces in the Philippines should be increased, that the air force should have 155 planes, and the Asiatic Fleet 24 submarines and 15 patrol planes. Harbor defense, antiaircraft, and mobile troop strength should be augmented, and Mindanao should be surveyed for possible airfield sites.

In transmitting the decision of the Joint Board to the commander of the Philippine Department, General Douglas MacArthur, then Chief of Staff, stated that the policy of the United States Government toward the Philippines was guided by the Tydings-McDuffie Act in which this country accepted responsibility for the defense of the Philippines until final independence was achieved. After that time, the United States was to give up all military installations in the Philippines, but, subject to further negotiations, might retain naval reservations and fueling stations in the Islands.

A year later, in May 1935, the Joint Board again revised the *Orange* plan. This revision was made to bring the plan into conformity with the 4-Army organization of the War Department, the Mobilization Plan of 1933, and the Navy's recommendations that the Pacific Fleet's line of advance through the Central Pacific be a progressive movement. The first operation, to be undertaken as soon as practicable, was to seize the Marshall and Caroline Islands from Japan in order to develop advance bases and secure the lines of communication to the Western Pacific.

The next year, 1936, *Orange* was revised again. Previously, the mission of Army and Navy forces had been twofold: to hold the entrance to Manila Bay, and to hold the Manila Bay area itself as long as possible. The second part of the mission was dropped in 1936, and the Army was directed to defend only the entrance to Manila Bay, but was authorized to undertake "such delaying action . . . as may be practicable without jeopardizing the timely withdrawal of mobile ground forces to the Bataan Peninsula. . . ." The Asiatic Fleet, which was only a small task force, was to divert Japanese naval forces from opposing the westward advance of the main US Fleet.

In the same year, 1936, there was a significant change in the Army's strategical plan which was the result of the development of a Philippine Army. Although the mission of Army forces in the Philippines remained the same, the 1936 revision made no definite provision for reinforcements from the United States. Instead of planning on the use of a corps of 50,000 men, the Army planners in the General Staff decided that the defense would be conducted by the peacetime garrison in the Islands (the Philippine Department consisting of 10,000 US Army troops) reinforced by the Philippine Army troops raised under local defense plans, and such American troops in China as could be sent to the Philippines. These defending forces would have to hold out for at least 6 months, after which, presumably, the Navy would have been able to open the line of communications across the Central Pacific.

The next, and final, revision of the Joint *Orange* plan came in 1938 and was due to the increasing threat of Japanese aggression in the Far East and the rise of the Fascist Powers in Europe. Since November 1937, the planning staffs of the Army and Navy, as a result of a Joint Board directive to prepare a new estimate of the world situation, had been studying their own plans in the light of international developments. To the Joint Board, it appeared that American plans dealing with a war against Japan were "unsound in general" and "wholly inapplicable to the present condition." For the first time, apparently, the strategic planners considered the possibility of a two-ocean war, but the solution accepted was not that which was followed when war came. The Army members of the Joint Planning Committee, be-

lieving that the US Fleet could not secure control in the Western Pacific, proposed that the United States maintain a defensive position east of the 180th meridian and exert economic pressure against Japan. The Navy members of the Committee continued to advocate an offensive war in the Western Pacific and the rapid projection of strong naval forces into Philippine waters in the belief that the US Fleet was strong enough to support such operations.

The plan finally approved by the Joint Board on 21 February 1938 compromised the Army and Navy views. It stated that, in the event of war with Japan, the operations of American military and naval forces would be guided by the following concept: "military and economic pressure, made progressively more severe, until the national objective is obtained." Initial operations would be primarily naval in character, and would be coupled with measures designed to insure the security of the continental United States, and the strategic triangle, Alaska—Hawaii—Panama. The Navy, in a series of operations, was to extend its control of the sea westward as rapidly as possible, while maintaining secure its line of communications. Together, the Army and the Navy were to conduct operations against Japanese armed forces and sea communications in order to bring increasing military and economic pressure against that nation. The joint mission of the forces in the Philippines remained the same: to hold the entrance to Manila Bay in order to deny the use of the Bay to Japanese naval forces.

The planning for the defense of the Philippine Islands shows clearly the dilemma in which the United States found itself. National policy dictated the defense of an insular possession, which, in the best opinion of American military advisers, could not be defended with existing naval and military forces. Plans were made for the defense of the Philippines, but these plans were based on conditions which few of the responsible planners believed could be fulfilled.

General Embick, who became chief of the Army's War Plans Division in 1935, expressed the views of these men when he stated that America's military position in the Far East was indefensible, and that the United States could not prevent the capture of the Philippines by the Japanese in the early stages of a war with that nation. The Philippines, he claimed, could be held only if the Navy could control the sea lanes in the Western Pacific, and after the mandated islands were taken.

In the light of these views, General Embick proposed, as he had some years earlier when he was commander of the harbor defenses in the Philippines, that the United States give up any idea of holding the Islands, and instead adopt as its peacetime frontier the strategic triangle, Alaska—Hawaii—Panama. The last was adopted and found expression in the final revision of the *Orange* plan in 1938.

Despite America's political commitments in the Far East which required the defense of the Philippines, Congress was extremely reluctant to grant funds for men and supplies, to increase the size of the fleet, or to strengthen American positions along the line of communications to the Western Pacific. After 1935, Congressional reluctance to spend money on Philippine defense was strengthened by the feeling that such military installations would, in a few years, probably revert to Philippine ownership. The War Department, therefore, was required to limit its defense measures to the maintenance of the Philippine garrison and existing installations.

Orientation of Strategy, 1938-1940

The conditions which had led to the revision of the *Orange* plan in 1938 led also to the re-examination of plans for a war in the Pacific. International events forced on Army and Navy planners a reorienta-

tion of strategy which placed an entirely different emphasis on the defense of American possessions in the Pacific.

Even after the "China Incident" had begun in 1937, it had still been believed that Japan would be fully occupied on the mainland for a long time. The potential threat of Soviet Russia's forces in the Far East, together with the war in China, had been regarded as sufficient guaranty that Japan, if she attempted to extend her empire southward, would do so by commercial and economic means rather than by military penetration.

The Nazi—Soviet Pact, followed by the German Army's march into Poland in September 1939, destroyed completely any hope for a peaceful settlement in Europe. The events of 1940 made it evident that the United States might soon be involved in war. In September, Germany, Italy, and Japan concluded the Tripartite Pact, and the following April, Russia and Japan reached agreement and signed a neutrality pact, thus freeing the latter for extension of her empire southward.

American efforts to halt Japanese aggression in Asia met with little success and only increased the tension between the two countries. On 26 July 1940, Japan was notified that the commercial treaty of 1911 would be abrogated, and on the same day Congress granted the President authority to control exports to Japan. Immediately, he put the export of oil and scrap iron under government license and banned the shipment of aviation gasoline to that country. By the early part of 1941, shipments of scrap iron, steel, gasoline, and other important war material from the United States to Japan had practically ceased.

Finally, in July 1941, all Japanese assets in the United States were frozen and, in effect, all her ships denied passage through the Panama Canal. While the United States market was being closed to Japan, American economic support to China was increased. Despite these moves, perhaps because of them, Japan continued to exert pressure on the French and Dutch colonies in Southeast Asia to "cooperate" in economic matters.

The threat presented by Japan's aggressive policies forced all the powers with interests in the Far East and the Pacific to strengthen their military forces in that area. Even more important than reinforcements and supplies was the need for a common policy in the Far East as well as in Europe. Army and Navy planners in this country re-examined their plans frequently in the period from 1938 to 1940, and there was a frequent interchange of views with the British, on the military as well as political level. During these years, it became clear that plans for operations against Japan, based on the assumption that the major effort of the United States would be in the Pacific, were no longer applicable. A new strategic concept for a war in which the United States might be involved in the Atlantic as well as in the Pacific gradually evolved as a result of a series of studies by Army and Navy planners and conversations with British military planners.

In the discussions leading to the last revision of the Joint *Orange* plan, it will be recalled, the possibility of a two-ocean war had been raised, and the Army had urged revision of the traditional American strategy for offensive operations in the Pacific. Although the plan finally adopted in February 1938 followed the traditional pattern, it took into account the danger of war in the Atlantic and stated that the United States would adopt initially a "position of readiness" for action in both oceans. American military and naval forces would be prepared to follow an offensive strategy in the Pacific or to safeguard American interests in the Atlantic. It was apparently assumed at this time, early 1938, that although a war between the United States and Japan might coincide

with a European conflict, this country would not become involved in Europe. Therefore, the United States could continue to plan on offensive operations in the Pacific and keep the fleet concentrated for action there.

Hemisphere Defense

The events of the spring and summer of 1938 in Europe—the annexation of Austria by Germany and the invasion of Sudetenland—and in Asia led to the re-examination of United States plans for hemisphere defense. In November 1938, the Joint Board instructed its planning committee to study the possibilities open to United States military and naval forces if the Axis violated the Monroe Doctrine and if Japan attempted to extend her influence in the Philippine Islands. From this directive stem the strategic studies which found final expression in the report of American and British planners who met in Washington in the spring of 1941, and a month later in *Rainbow No. 5*, the plan which was in effect when war came. These studies, unlike the color plans of which *Orange* was one, were based on the realistic assumption that the United States might become involved in a war with more than one enemy and in the Atlantic as well as the Pacific.

The report of the planners, made in April 1939, and described as a "monument to the Joint Planning Committee," reviewed the world situation and the probable objectives of the Axis in Europe and in the Pacific. Here, for the first time, was a complete exposition by a joint army and navy group of the effects of concerted action by Germany, Japan, and Italy upon the United States, and the measures to be taken to prepare for such an eventuality. The view, so often expressed in *Orange* plans, that the United States could maintain an offensive strategy in the Pacific was ruled out as a possibility if Japan acted with the Fascist Powers on the grounds that the Western Hemisphere would be imperiled. The Japanese objective, the planners believed, would be to capture the Philippines and Guam and to secure domination of the Western Pacific and Eastern Asia. To secure these objectives, Japan would first have to neutralize the US Fleet. Prophetically, the planners pointed out that "a probable Japanese measure would be to damage major fleet units without warning, or possibly attempt to block the fleet in Pearl Harbor." Unless the Philippines and Guam were adequately prepared in advance, the United States must expect to lose all possessions west of 180 degrees during the early period of a war with Japan. The United States would then have to fight its way back across the Pacific in a series of amphibious operations, as was finally done from 1942 to 1945.

The security of the United States, the Joint Committee stated, depended on the safety of the Canal Zone and its approaches, and provision had to be made first for the defense of this vital area. Such security could be provided only by naval superiority, for control of the South American coast would mean control of that continent. Since the US Fleet was not strong enough to maintain superiority in the Atlantic, so necessary to the protection of the continental United States, and at the same time conduct offensive operations against Japan in the Western Pacific, the planners recommended that naval forces strong enough to undertake offensive operations against Germany and Italy "to preserve the vital security of the Caribbean and the Panama Canal" be maintained in the Atlantic Ocean. "If this is done," the planners concluded, "it will be necessary to assume a defensive attitude in the Eastern Pacific." The effect of such a strategy was the abandonment of the Philippines, Guam, and Wake, and the priority, in the event of a two-ocean war, of the Atlantic theater. The loss of American possessions west of the 180th meridian was

apparently not considered inimical to American interests.

Significantly, no mention was made of the Philippines in the measures proposed to prepare the United States for a possible war with the Axis. Hawaii, the Canal Zone, Alaska, and Puerto Rico were to be strengthened, but apparently the committee had written the Philippines off as a certain loss. The planners, however, were astute enough to recognize, as later proved to be the case, that "emotionalized opinion, rather than . . . a reasoned adjustment of operations to the means at hand" might decide which objectives would be defended and where the military and naval forces would fight. Certainly, the defense of the Philippine Islands a few years later became to the American people a matter of some importance, especially with US Army forces fighting heroically there, and the Islands could not be ignored because their defense was considered strategically ill-advised.

The *Rainbow* Plans

The report of the Joint Planning Committee was approved by the Joint Board on 6 May 1939, and within a week the planners were directed to prepare additional plans, ultimately five, each of which was designed to meet a different situation. These plans, to distinguish them from the color plans, were called *Rainbow* plans, probably because each dealt with more than one nation. To each was given a number, so that *Rainbow No. 1* dealt with the first situation outlined by the Joint Board, and *Rainbow No. 5* with the last. The first four plans were eventually cancelled and *Rainbow No. 5* was later expanded to become, in effect, the plan followed when war came.

The first of these plans was completed and approved in August 1939, and while its major emphasis was on the defense of the Western Hemisphere, one of the 10 joint tasks assigned to the Army and Navy provided for holding the entrance to Manila Bay. The Army was to delay the enemy at Subic Bay and elsewhere without jeopardizing the withdrawal to Bataan, and the Navy would support the Asiatic Fleet "by maintaining base facilities as long as practicable."

The outbreak of war in Europe in September 1939 led to further re-examination of existing plans by American planners. Many of the assumptions of earlier planning now became realities and the estimates and plans were revised continually in terms of current developments. Work on the remaining *Rainbow* plans continued, while *Rainbow No. 1* was revised. In April 1940, the Joint Board, in approving the latest Planning Committee estimate, agreed that the most immediate danger seemed to be in the Pacific and that Japan might take aggressive action at any moment. It therefore directed the planners to prepare first a plan for the use of United States forces in the Pacific *(Rainbow Nos. 2* and *3)*, and then one for possible operations in the Atlantic.

The end of the "phony war" in Europe, and Germany's immediate success during April and May 1940, changed the strategic picture entirely. Emphasis now shifted from the Pacific to the Atlantic and to the measures required to defend the Western Hemisphere from possible Axis penetration or invasion. The military measures taken to meet this danger included a new directive to the joint planners which resulted in a concentration on the situation envisaged in *Rainbow No. 4*.

An indication of the reorientation of American strategy in May 1940 can be seen in the plans for the fleet. Early in May, the fleet had been ordered to remain indefinitely at Pearl Harbor as a "deterrent" to Japanese advances. By the end of the month, the movement of a major portion of the fleet to the Atlantic seemed entirely possible, and such a provision was actually made in the plans in preparation.

An Army planning study, prepared on 22 May, stated that the most the US Army

could do was to protect the Western Hemisphere. This implied, of course, the loss of the Philippines and other American possessions in the Western Pacific. When General Marshall showed this study to the President, Admiral Stark, and Mr. Sumner Welles, they agreed that "we must not become involved with Japan, that we must not concern ourselves beyond the 180 Meridian, and that we must concentrate on the South American situation."

The fall of France in June 1940, and the possibility that England might now be defeated, completed the shift in American strategy from the Pacific to the Atlantic. The danger that the French Fleet and the British Fleet might fall into German hands, or be sunk, was so serious that it was considered as automatically setting the date for American mobilization. It now became necessary to plan for a war in which the United States alone, or with Great Britain, would face Germany and Italy in the Atlantic and Japan in the Pacific, the situation most closely approximated by *Rainbow No. 5*. In response to a series of questions by the President, the Army and Navy developed a series of studies on the "Basis for Immediate Decisions Concerning the National Defense," which recommended an effective defense for the Western Hemisphere and a strategic defensive in the Pacific.

US—British Talks

Of primary importance to charting America's future course was a correct estimate of Britain's ability to resist invasion. Special observers were sent to London in the summer of 1940, at Mr. Churchill's invitation, to make such estimates.

The Navy had sent representatives to London for unofficial conversations at the Admiralty as early as December 1937 when the events which had led to a re-examination of the *Orange* plan also prompted the recognition for closer naval cooperation with the British. At that time, Captain Royal E. Ingersoll, Chief of the Navy War Plans Division, had secured unofficial assurance from the British that their waters would be available to United States vessels, and had given similar assurance to the British "in the event of the two fleets being required to work together in a war against Japan. . . ." It was hoped then that England would send a battle fleet to Singapore to restrain Japanese advances southward. Such a hope was based on Italy's neutrality in a war, but by May 1939 the British inclined to the view it would be impossible to reinforce Singapore, and that events might force the United States to assume command of the Pacific and the Eastern Atlantic.

With the arrival of the Special Observers in London in August 1940, the conversations which had been carried on informally by the Navy were broadened to include Army representatives and enlarged in scope to include basic questions of strategy and the production of arms. The British view of the Far Eastern situation was that every effort must be made to avoid war with Japan since events in Europe made it impossible to send a fleet to Singapore. Admiralty officers suggested that the US Asiatic Fleet be strongly reinforced, a view which Admiral Robert L. Ghormley, US Navy observer, strongly opposed. It was apparent already that in the event of a two-ocean war, US naval forces would be required in the Atlantic to guard against German and Italian expansion, but there was no disposition to move the fleet from Pearl Harbor, or full acceptance of the idea that the Atlantic was the decisive theater. Although this idea had already been expressed frequently, and was strongly defended by the Army planners, the US Fleet operating plan, in the summer of 1940, still provided for a naval offensive into the Western Pacific in a war with Japan.

On 25 September, just 2 days before the announcement of the signing of the Tri-

partite Pact, the Army War Plans Division completed a report on the ability of the United States to cope with the problems presented by the Axis threat. The most serious danger was in the Atlantic, the planners stated, and operations in the Pacific should occupy a secondary place in American strategy. After reviewing the possibilities in Europe, the planners pointed out that the United States might soon face renewed Japanese advances, possibly against the Netherlands East Indies or the Philippines, but that it would not be possible to oppose such moves by a major effort in view of the greater danger in the Atlantic. Discussions of the situation in the Pacific continued on both the military and political levels through September and October 1940. Admiral Ghormley renewed his discussions with the British and the question of sending a part of the fleet to the Far East was again considered, but rejected. It was decided that, in the event of war, the Asiatic Fleet would withdraw to the East Indies or Singapore. The situation in the Far East was considered so serious that American citizens there were advised to return home.

The Army had long urged that in a war with the Axis the United States adopt a defensive role in the Pacific. This view had been expressed in various estimates and plans during the past 2 years, but the Navy did not support such a strategy whole-heartedly until the fall of 1940 when the views of Rear Admiral R. K. Turner, recently designated Chief of the Navy's War Plans Division, influenced naval planning.

On 12 November, Admiral Stark, Chief of Naval Operations, prepared a memorandum outlining the possible courses of action open to the United States under different circumstances. Four alternative plans were presented, and a decision had to be made as to which was to become national policy. The fourth of these, plan "Dog," was the one favored by Admiral Stark, and endorsed by General Marshall. It envisaged the situation described in *Rainbow No. 5*, and called for an offensive effort in the Atlantic and a defensive strategy in the Pacific. America's political and military position in the Far East would undoubtedly be weakened or destroyed, Admiral Stark pointed out, and every effort should be made to avoid war with Japan. In this same memorandum, Admiral Stark proposed that the military and naval staffs of the potential allies meet "to reach agreements and lay down plans for promoting unity of allied effort. . . ."

The Major Lines of Strategy

By December 1940, the major lines of American strategy had emerged, and the election of President Roosevelt assured a continuation of the policy begun the year before. While hoping to secure his aims by measures "short of war," the President had stressed during the preceding months America's unreadiness for war and the danger from Europe and the Far East. Army and Navy planners had defined the problem facing the United States in a series of studies and had made plans to meet various situations which might arise. The most likely contingency toward the end of 1940 was that the United States, allied with Great Britain, might be involved in a two-ocean war against a combination of Germany, Italy, and Japan. In such a contingency, it was generally agreed that the decisive effort would have to be made against the most dangerous enemy, Germany. The United States would, therefore, be required to adopt a defensive role in the Pacific and concentrate on the protection of Hawaii, Alaska, and Panama. A plan covering such a situation, *Rainbow No. 5*, was already in existence, but many matters still remained to be decided. Chief among these was the necessity for agreement between the United States and Great Britain on strategic objectives and the measures necessary to secure these objectives.

Before agreement could be reached with the British, it was necessary to define national policy and strategy as a guide to military planners. While arrangements were being made for conversations between British and American staff officers, a statement of national policy was being prepared, with Plan "Dog" as the basis.

On 16 January 1941, at a White House meeting attended by the Secretaries of State, War, and the Navy, and the chiefs of the two services, the President established the following principles of United States foreign and military policy:

> That we would stand on the defensive in the Pacific with the fleet based on Hawaii; that the Commander of the Asiatic Fleet would have discretionary authority as to how long he could remain based in the Philippines and as to his direction of withdrawal—to the East or to Singapore; that there would be no naval reinforcement of the Philippines; that the Navy should have under consideration the possibility of bombing attacks against Japanese cities.
>
> That the Navy should be prepared to convoy shipping in the Atlantic to England, and to maintain a patrol off-shore from Maine to the Virginia Capes.
>
> That the Army should not be committed to any aggressive action until it was fully prepared to undertake it; that our military course must be very conservative until our strength had developed; that it was assumed we could provide forces sufficiently trained to assist to a moderate degree in backing up friendly Latin-American governments against Nazi-inspired fifth column movements.
>
> That we should make every effort to go on the basis of continuing the supply of matériel to Great Britain, primarily in order to disappoint what he thought would be Hitler's principal objective in involving us in a war at this particular time, and also to buck up England.

Allied Conversations and *Rainbow No. 5.*

From 29 January to 27 March 1941, the strategic ideas developed during the past 3 years were thoroughly explored with British planners at a series of meetings held in Washington. These conversations were not intended to be binding on the two nations, and every care was taken, on the American side, to refrain from giving these meetings a political or official character. Military representatives from Canada, Australia, and New Zealand were associated with the United Kingdom delegation though not present at the joint meetings.

The purpose of these meetings, as stated in the final report, was threefold: to determine the best methods by which the armed forces of the Associated Powers (the United States and the British Commonwealth with its allies) could defeat Germany and her allies should the United States be forced into the war; to coordinate plans for the use of their forces; and to reach agreement on "the methods and nature of military cooperation." The agreements reached by the staff planners at these meetings were to be subject to confirmation on the American side by the Chief of Naval Operations and Chief of Staff, US Army, and by the United States government.

The report submitted by the delegates to the Washington meetings stated that the broad strategic objectives of the Associated Powers would be the defeat of Germany and her allies. The achievement of this aim was limited by the recognition that the paramount interest of the United States was to prevent any European or Asiatic power from invading the Western Hemisphere. On its side, the British Commonwealth would dispose its forces in such a way as to assure the security of its members. "A cardinal feature of British strategic policy," the report stated, "is the retention of a position in the Far East such as will ensure the cohesion and security of the British Commonwealth and the maintenance of its war effort." Since Germany was considered the most important member of the Axis, the Atlantic and European area was regarded as the decisive theater. The principal effort of the United States, therefore, was to be exerted in that area toward the defeat of Germany, an idea which had appeared in earlier Navy and War Department correspondence. American operations in other theaters were to be conducted in such a manner as to facilitate the effort against Germany. This principle is one of the major decisions of the war; it was a basic

assumption in all war plans following the meeting, and was the basis of most strategic planning during the war.

With regard to Japan, the American and British staff planners stated that even if Japan did not enter the war immediately it would still be necessary to guard against eventual Japanese intervention. If Japan did enter the war, the strategy of the Associated Powers in the Far East was to be defensive, and the United States would not increase its existing military strength in that area. The US Fleet, however, was to be employed "offensively in the manner best calculated to weaken Japanese economic power, and to support the defense of the Malay barrier by diverting Japanese strength away from Malaysia. Finally, American strength in the Atlantic and Mediterranean areas was to be increased so as to release British forces for transfer to the Far East.

Under the provisions of the US—British staff report, if the United States became involved in the war, it was to assume responsibility for the strategic direction of its own and British forces in certain areas in the Atlantic and Pacific. The Philippine Islands were to be included in the Far East Area, which contained also the Netherlands East Indies. Defense of this area was to be the responsibility of the respective commanders of the military forces concerned, who were to make their own arrangements for mutual support. The strategic direction of naval forces in the Far East, except for those defending the Philippine Islands, was assigned by the US—British report to the Commander in Chief, China, a British officer. The commander of the US Asiatic Fleet was to be responsible for the direction of naval forces engaged in supporting the defense of the Philippines.

The naval forces in the Far East area, consisting of the US Asiatic Fleet and the Dutch and British vessels based there, were given the task of protecting the sea communications of the Associated Powers and disrupting those of the enemy. They were to destroy the enemy's forces and support the land and air forces of the Associated Powers. Under the plan presented by the US—British staffs, the mission of the ground and air forces was to defend Hong Kong, the Philippines, and the Netherlands East Indies, and to hold Malaya, Singapore, and Java against Japanese attack.

After the meetings, the Joint Planning Committee of the Joint Board was directed to prepare a war plan based upon the report of the American and British planners, and Army and Navy commanders in the Far East were instructed to complete arrangements with the British and Dutch commanders in that area for a conference to be held at Singapore as soon as possible. The Chief of Naval Operations, Admiral Stark, told the Navy fleet commanders that the US Asiatic Fleet would not be reinforced, "but would be supported by offensive operations of the US Pacific Fleet." The difficulties at the present time, Stark told the fleet commanders, were, first, the uncertainty as to what action the Japanese might take, and, secondly, the British insistence on the importance of holding Singapore and of supporting Australia, New Zealand, and India. This view had led the British to propose earlier the transfer of almost the entire Pacific Fleet to Singapore, a proposal which had been rejected at the Washington meetings. With regard to Japan's attitude, Stark stated that "unquestionably the concentration of the US Pacific Fleet in Hawaii has had a stabilizing effect in the Far East." "What the effect on her (Japan) would be were the United States to transfer a large part of the Pacific Fleet to the Atlantic can . . . be only surmised . . . we shall rigidly avoid making any indication that we contemplate such a transfer until the last possible moment."

Singapore Conference

While the Joint Planning Committee was working out an American war plan based on the US—British staff conversations, representatives from the Far East commands of the Associated Nations were meeting in Singapore. Present at the conferences, held in April 1941, were Dutch, British (including Australian and New Zealand), and American officers. This meeting had been preceded in February by a conference between British, Dutch, and Australian representatives, with US observers present. At that time, the necessity for collective action had been emphasized and the principle of mutual reinforcement accepted.

The discussions during the April meeting were based on a situation in which Germany, Italy, and Japan would be at war with the Associated Powers. The objective of the meetings was to explore plans for the conduct of military operations in the Far East in such a contingency, on the basis of agreements reached in Washington.

The report of the meeting in Singapore stressed, as had the Washington report, that, in the event of war, Europe and the Atlantic should be the decisive theater and that the forces employed in other areas should be kept at a minimum. Strategy in the Far East, therefore, would be defensive, but preparations should be made for air operations against Japan from China and the Philippines. The most important interests of the Associated Powers in the Far East were recognized by the conferees as the security of Singapore and of sea communications throughout the area. An important subsidiary interest was the security of Luzon in the Philippine Islands.

The report considered the courses of action open to Japan if she wished to secure control of the sources of vital war supplies in Southeast Asia. To achieve this objective, she would have to gain complete political and economic domination of the area, which would probably require military action against any one or more of the following: the Philippines, Hong Kong, Malaya, Burma by way of Thailand and Indo-China, and Borneo or the northern islands of the Netherlands East Indies. Japanese attacks against the southern islands in the Indies (Java and Sumatra), Australia, and New Zealand were ruled out as initial operations. The delegates thought that the disruption of sea communications and the establishment of advance bases would certainly form part of any Japanese plan of action and might constitute a most serious threat to the war effort of the Associated Powers.

The conferees at Singapore regarded an early Japanese attack against the Philippine Islands as most likely since it would eliminate a serious threat to her flank in the event of further movement southward. The proximity of these Islands to the homeland would make it possible for Japan to provide expeditionary forces moving against them with strong air and naval support. If successful, an attack against the Philippines would provide Japan with bases from which to launch further expeditions. Until United States naval and air forces in the Philippines were eliminated, Japanese attempts to take Malaya or the East Indies would be extremely hazardous and in danger of being outflanked. An attack against Hong Kong would offer the Japanese the same advantages as an attack against the Philippines.

Although the representatives at Singapore agreed that Japanese action must not divert the Associated Powers from the major objective—the defeat of Germany and Italy—they recommended that certain preparatory measures be taken. The most important of these was to organize air operations against Japan. Japan was also thought to be particularly vulnerable to economic blockade and naval pressure, and the conferees believed that in event of war the collapse of Japan would probably occur

as a result of these measures, together with air bombardment. They also agreed that Luzon had great value "from the offensive point of view" and recommended that its defense be strengthened and every effort made to maintain a strong bombing force there as well as in China.

The report of the Singapore meeting recommended that the British commander, China Station, should exercise strategical direction over all naval forces in the area, except the US Asiatic Fleet. It also recommended that the Commander in Chief, Far East, a British officer, should similarly direct the air forces. Areas of responsibility were defined, and the basis of a plan for naval and air cooperation, which included the movement of vessels of the Asiatic Fleet to Singapore if Manila were attacked, was established. In their own reports to London, the British commanders stressed two points: first, the importance of offensive operations by the US Pacific Fleet, and secondly, the importance of strengthening Luzon.

The report of the Singapore meeting, with certain exceptions, was approved by the British Chiefs of Staff. The Chiefs of Staff were not prepared to press the recommendations that the Philippines be strengthened, although they would welcome such a move if it were not made at the expense of the American effort in the Atlantic. The reaction of US Army planners in Washington and of Major General George Grunert, the Philippine Department commander, to the Singapore report was far less favorable. The planners' main objection was that it included political matters, but they also felt that it violated American strategy in the Far East and the agreements reached at the Washington meetings. Specifically, they pointed out, the Singapore agreements overrated the strength of the Philippines as a base for offensive action against Japan and planned to utilize the US Asiatic Fleet more for offensive operations based on Singapore than for the defense of the Philippines. General Grunert had arrived at the same conclusion independently, and expressed the view that the British apparently thought of the Far East in terms of the defense of Singapore rather than in terms of American interest in the Philippines, and already regarded the US Asiatic Fleet available for Singapore's defense.

The report was revised by the British in August 1941 and sent to Washington for comment. The Chief of Staff and Chief of Naval Operations thought that the recommendations were not adequate to meet the situation in the Far East and proposed instead to develop the provisions of the Washington conference relating to the Far East. Finally, Brigadier General Leonard T. Gerow, Chief of the War Plans Division, recommended to the Chief of Staff that no further action be taken on the Singapore report.

Although no war plan was ever made on the basis of the report drafted at Singapore, Air Chief Marshal Sir Robert Brooke-Popham, British commander in the Far East, reported that it "remained the basis on which we were able to work before, and immediately after, the outbreak of war with Japan, both with the Netherlands East Indies and, to a lesser degree, with the Philippines." Admiral Thomas C. Hart, commander of the US Asiatic Fleet, was not as optimistic about the results of the Singapore meetings. As far as the Asiatic Fleet was concerned, no definite commitments had been made to assist the British or the Dutch. When the war began, the admiral stated, "we still were in the position of . . . exercising complete strategic control" of American vessels in the Far East. Hart saw two serious disadvantages to the lack of preparation for joint action by the principal naval powers in the Far East: first, the Americans had no opportunity to acquire a knowledge of East Indian and Malayan waters where they later had to fight; and, secondly, there

were few preparations for joint tactical operations.

At the conclusion of the Washington meetings of the US—British staffs, it will be recalled, the Joint Planning Committee of the Joint Board had been directed to prepare a comprehensive war plan based upon the agreements reached. On 30 April 1941, the Joint Planning Committee submitted its plan to the Joint Board, which approved the plan at its meeting on 14 May. This plan, Joint Basic War Plan *Rainbow No. 5*, together with the report of the US—British staff conversations, was approved by the respective service chiefs and Secretaries before the end of May, and was then sent to the White House for approval. The President withheld approval "at this time" because the British had not yet approved the report. He indicated his satisfaction with both documents, however, by suggesting that, "in case of war," they be returned to him for his approval. Although presidential approval had been withheld, the Chief of Staff pointed out that the plan had not been disapproved and that, therefore, the Army could go ahead with its "tentative arrangements." The Army planners thereupon quickly completed their own plan based on Joint *Rainbow No. 5*, and the Chief of Staff approved it on 19 August.

The general assumptions and the concept of war of the joint *Rainbow No. 5* plan were identical with those of the report of the US—British staffs. Until the United States was forced into war, it would adhere to a policy of hemisphere defense, increase as rapidly as possible its defense production and the strength of its armed forces, while continuing to provide materials of war to Britain and her allies and restrain the Japanese in the Far East by political and economic action. Should the United States be forced into a war with the Axis Powers, it would act in concert with the Associated Powers in the manner outlined in the US—British staff report. Strategy in the Far East and in the Pacific was to be defensive and the main emphasis would be in the Atlantic and European area, the decisive theater.

Army Plan

The War Department *Rainbow No. 5* reiterated the strategic ideas of the joint plan, and applied them to the Army's mission. Again, it was stated that the principal effort of the United States would be in the decisive theater, "with operations in other theaters conducted in such a manner as to facilitate this effort."

The Army's role in the Pacific and Far East was limited in the *Rainbow* plan to assisting in the defense of the Hawaiian and Philippine coastal frontiers, an effort which would initially involve mostly air and naval forces. The building of large land and air forces for major offensive operations against Germany was to be the immediate primary effort for the Army. In the Far East area, which included the Philippine Islands, the defense was to be conducted by the respective commanders who were authorized to make appropriate arrangements for mutual support.

The mission assigned to Army and Navy forces in the Philippines was similar to that stated in *Orange*: to hold the entrance to Manila Bay in order to deny its use to enemy naval forces. Army forces were to delay the enemy at Subic Bay and wherever else possible "without jeopardizing the timely withdrawal of mobile ground forces to the Bataan Peninsula," defend the entrance to Manila Bay, and support the Navy. Naval forces, including the Asiatic Fleet and the 16th Naval District, were assigned the mission of supporting land and air forces engaged in the defense of the territories of the Associated Powers, protect their sea communications, and destroy enemy raiding forces. The Philippine Coastal Frontier was defined as those land and sea areas which it would be necessary to hold in order to defend the

entrance to Manila Bay. The degree of preparation for the defense of this coastal frontier was, as defined in the Joint Action of the Army and Navy, Category E, i.e., such measures required to defend an area which would in all probability be subject to major attack. However, *Rainbow* stipulated that no reinforcements from the United States would be sent to the Philippine Coastal Frontier. The defense was to be conducted entirely by the forces already assigned, augmented only by such personnel and facilities as were available locally, i.e., the Philippine Army, although it was not mentioned by name.

Navy Plan

The *Rainbow* plan which was drawn up by the Navy and distributed on 26 May 1941 followed the same pattern as that developed by the War Department. To the Pacific Fleet was assigned the task of diverting enemy strength away from the Malay barrier by the denial and capture of positions in the Marshalls, and by raids on enemy bases and sea communications. The Pacific Fleet was also to defend Wake, Guam, Midway, Samoa, and other American islands, as well as "prepare to capture" the mandated islands and establish an advanced American fleet base at Truk. These moves would be necessary preparatory steps to the maintenance of the line of communications between the United States and the Philippine Islands, and the establishment of American naval superiority in the Western Pacific. Provision was also made in the Navy's plan for the transfer to the Atlantic of a portion of the Pacific Fleet (one Cruiser Division) upon orders from the Chief of Naval Operations.

The commander of the US Asiatic Fleet was assigned six tasks in *Rainbow No. 5*. The first was to raid Japanese sea communications and destroy Axis forces. Second, he was to support those land and air forces engaged in the defense of the territories of the Associated Powers, with the proviso that his responsibility for supporting the defense of the Philippines "remains as long as that defense continues." His third task was the destruction of Axis sea communications by capturing and destroying vessels trading with the enemy. Next, he was to protect the sea communications of the Associated Powers by "escorting, covering, and patrolling," and by destroying enemy raiding forces. He was also directed to route United States shipping in accordance with agreements reached. The defense of the Philippine Coastal Frontier "—Category of Defense 'E'—," in cooperation with the Army, was perhaps the most important mission assigned the Asiatic Fleet commander. The actual employment of local naval defense forces was entrusted to the commander of the Philippine Naval Coastal Frontier, who was also the commander of the 16th Naval District. Under the direction of the fleet commander, this officer was to arrange for the joint tactical and strategical employment of his forces in cooperation with the Army. The Commander in Chief, Asiatic Fleet, at his discretion and when the situation demanded, was authorized to "shift base to British or Dutch ports."

By the middle of 1941, then, there were three separate military plans which dealt with the defense of the Philippine Islands and American military strategy in the Far East. War Plan *Rainbow No. 5*, which was world-wide in its provisions and conformed to arrangements made with the British staff, called for a defensive strategy in the Pacific and Far East. Based on the assumption that the United States would be at war with more than one nation, and would be allied with Great Britain, the plan accepted implicitly the loss of the Philippines, Guam, and Wake. It called for a defense of the Philippine Coastal Frontier, defined as the land and sea areas necessary to hold the entrance to Manila Bay, and stated that no reinforcements

were to be sent to the Philippines. No provision was made, as in earlier plans, for an immediate effort to establish naval superiority in the Western Pacific or the security of the line of communications, indispensable conditions to the successful defense of an insular position. However, the Pacific Fleet was to take certain "preparatory steps" to accomplish these objectives.

The *Orange* plan, the oldest plan dealing with a possible war between the United States and Japan, also required the defense of the entrance to Manila Bay. Unlike *Rainbow*, the *Orange* plan was based on the assumption that only the United States and Japan would be at war. Like *Rainbow*, it held out no promise of immediate reinforcement to the Philippine garrison, but stated that the Navy, in a series of operations, would move westward across the Pacific as rapidly as possible, while maintaining secure its line of communications. Economic pressure, together with military measures, was to be exerted to bring about the defeat of Japan. Army forces in the Philippines were to hold off the enemy until the Philippine Army could be mobilized, and would conduct the defense in such a way as to permit the withdrawal of mobile forces to Bataan.

The third plan, that of the Philippine Commonwealth—developed by the Military Advisor, General MacArthur—called for a defense of the entire Archipelago, and was to become effective in 1946. This plan was not intended to be used until the Philippines acquired their independence, and the force required to put the plan into effect would be ready only at that time. It was based on the use of the regular and reserve forces of the Philippine Army, which in 1939 consisted of approximately 110,000 officers and men. Although provision was made for local defense of the many islands in the Philippines and for driving off the enemy before he could land, the Commonwealth had no fleet and would be forced to rely, in the final analysis, on the US Pacific and Asiatic Fleets.

No single one of these plans was followed in its entirety when war came. The creation in July 1941 of a new command in the Far East and General MacArthur's return to active duty with the US Army changed the situation and resulted in the modification of existing plans which combined elements of all three plans.

A military force is not properly balanced against itself. It should be weighted against the enemy. It should be designed and proportioned to evade an enemy's strength and to exploit his weakness.

General Hoyt S. Vandenberg

The Logistical Planning of Operation Overlord

Lieutenant Colonel Frank A. Osmanski, *General Staff Corps*

This is the second of three articles by Lieutenant Colonel Osmanski on the logistical planning of Operation Overlord. *The third article will appear in the January issue of the* MILITARY REVIEW.—*The Editor.*

PART II

THE province of strategic logistical planning can be determined from an examination of the functions performed by the ETO strategic logistical planners and of the methods used by them to impart strategic guidance in logistics matters to other planners.

Bolero

In the European operations, responsibility for that part of strategic logistical planning which deals with the concentration of troops and their equipment was delegated to SOS from the beginning. In fact, it will be remembered that SOS was originally activated for the primary purpose of planning and executing *Bolero*. *Bolero* planning began when Combined *Bolero* Committees (see Chart 4, p. 33, November issue) were established in Washington and London. The Washington committee was to make all first decisions calling for joint consideration on the highest governmental level, and the London committee, comprising representatives of the British supply ministries, US Army Air Force, US Navy, and ETOUSA, was to plan in detail and to execute the actual concentration of US forces in the United Kingdom.

There were four *Bolero* Key Plans (see Chart 11). Key Plan No. 1, published in May 1942, was designed to establish the means for staging Operation *Roundup*. When the Russian situation became critical, this plan was modified to Key Plan No. 2, published in July 1942, which was to provide an increased and accelerated buildup for possible operations in relief of the Russians. *Torch* operations in North Africa in the late fall of 1942 so attenuated the forces already established in the United Kingdom that a new plan, Key Plan No. 3, published in November 1942, had to start again from scratch. Finally, when Operation *Overlord* received the official blessing of the Quadrant Conference in Quebec, *Bolero* Key Plan No. 4, published in July 1943, was designed to provide it the necessary means. A final supplement in October 1943 completed *Bolero* planning.

Bolero plans required tremendous effort to execute, some indication of which is given by the following statistics:

Transportation, shelter, hospitalization, supply, training facilities, and general welfare activities had to be provided for 1,200,000 men.

94,000 hospital beds had to be established in existing, converted, or newly constructed installations and to be augmented later by 30,000 additional beds in tented camps.

20,000,000 square feet of covered storage

and shop space and 44,000,000 square feet of open storage and hard-standings had to be provided.

Plans had to be made and construction materials stockpiled for all hospitals, depots, shops, railroads, pipe lines, ports, and bridges to be constructed or reconstructed in France.

Imports rising from 753,000 long tons per month in July 1943 to 1,900,000 in May 1944 had to be unloaded, transported inland, and stored in depots in the United Kingdom.

Logistical Planning of *Overlord*

Responsibility for mounting US forces participating in Operation *Overlord* was delegated by ETOUSA to SOS on 29 October 1943. By June 1944, there were 1,527,000 US troops in the United Kingdom and in addition to T/E equipment there was a stockpile of 2,500,000 tons of equipment collected for the invasion. For purposes of mounting the US effort in the forthcoming invasion of Europe, the western half of Southern England had been allotted to SOS. Mounting was executed in three phases:

Assault force—60,000 men and 6,800 vehicles;

Follow-up force—70,000 men and 10,500 vehicles;

Build-up force—370,000 men and 53,000 vehicles (by D+14).

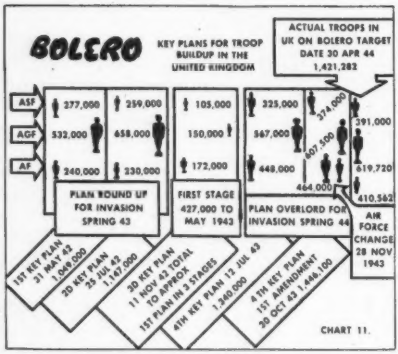
The assault and follow-up forces were assigned to particular ships and craft and were actually preloaded prior to D-day. The build-up forces were to be transported to the Continent according to prearranged priority tables but had to depend on returning ships and craft for their lift. Mounting procedures consisted of a series of movements from home stations in the United Kingdom to concentration areas, thence to marshalling areas, and finally to embarkation areas and onto ships. To accomplish the movement of units through these several stages and to get them onto the proper ships required exact control and coordination. This was exercised by a staff organized exclusively for that purpose and known as Build-up Control (BUCO). BUCO was aided by three other control staffs: Movement Control (MOVCO), which issued movement orders and was a function of the Transportation Corps; Turnaround Control (TURCO), which performed liaison with the Navy and kept BUCO in England and the Engineer Special Brigades in France advised of shipping schedules; and Embarkation Control (EMBARCO), which maintained accounts of the location of units and the availability of spaces in the concentration and marshalling areas. The over-all mounting responsibility was a tremendous one and was well discharged. As an indication of its magnitude, the fact can be cited that 3,780 assault craft and 142 cargo ships had to be assembled, loaded, and embarked for the assault alone.

Logistical planning for Operation Overlord took into account many factors: the mounting of forces, assembly of matériel, selection of lodgment areas, ports and artificial harbors, and emergency measures

In planning the strategy for the cross-Channel invasion, the first major decision which had to be made concerned the selection of the lodgment area which *Overlord* must secure. The logistical requisites for this lodgment area were that, principally, it should include major ports capable of development to capacities adequate for the support of 29 divisions, increasing thereafter at the rate of three to five additional US divisions per month; and that good beaches should be available in the assault area for operation for at least 3 months

following D-day, initially as a substitute for and subsequently as a supplement to port capacity.

Then, of course, there were the further logistical requirements that communications inland be good; that sites for airfields be such that a minimum of construction materials would be required; that local resources, particularly construction materials, be available to the maximum; that the turnaround time of shipping between bases in the United Kingdom and ports on the Continent be the shortest practicable; and that accommodations and



hard-standings be available for large depot areas.

A look at the map and a knowledge of assessed import capacities would reveal that there are six groups of major ports which could have been developed to sufficient capacity to support 29 or more divisions. These were the following:

Biscay-Brittany Group (Bordeaux-Brest);

Brittany-Cotentin Group (Nante-Caen);

Cotentin-Seine Group (Cherbourg-Dieppe);

Seine-Pas de Calais Group (Le Havre-Calais);

Pas de Calais-Belgian Group (Boulogne-Antwerp);

Belgian-Dutch Group (Dunkirk-Rotterdam).

Good beaches were available for entrance by assault only into the areas of three of these groups of major ports: Brittany, Cotentin-Seine, and Pas de Calais. The current radius of action of fighter aircraft at that time determined that an assault only into the Pas de Calais, Caen, and Cotentin areas could be supported by air operations. For logistical reasons, the Caen area alone was acceptable, for in the Pas de Calais area the eventual lodgment would have to include ports as far north as Antwerp or south as Le Havre in order to be adequate. In the Cotentin area, although one major port would be captured early, expansion to further ports would be difficult and airfield sites would be scarce. In the Caen area, there were beaches of high capacity, shelter from prevailing winds, excellent airfield sites, and ease of expansion to include either the Brittany or the Channel ports. The Caen area was therefore selected.

The relative positions of the US and British forces on the Continent were next determined. Essentially for logistical reasons, it was decided that the US should be on the right or open flank and the British on the left or pivot. In the United Kingdom, the *Bolero* buildup of US depots and camps had been concentrated in the western half of the island, the British condensing their installations into the eastern half. Therefore, in order not to cross sea lines of communication across the Channel, and also in order to avail the US forces of the Cotentin and Brittany ports to which shipments of troops and cargo could be sent direct from the US, the US Armies were placed on the marching flank.

Logistical planners of *Overlord* encountered many critical and major logistical problems at an early date and were long concerned with many of them. Among these problems, the following were representative:

Provision of the necessary service troops in the numbers and types required; (this was particularly difficult as the activation and training of service troops in the Zone of the Interior lagged behind that of ground force units by some 6 months);

Stockpiling the machinery and matériel for developing capacity from wrecked ports and acquiring the necessary devices and techniques for reconstructing these demolished ports quickly;

Devising means for evacuating the wounded, particularly from the beaches and smaller ports in the earlier phases of the operation;

Producing the necessary lift in assault landing craft to land the required invasion forces;

Most important of all, developing techniques and devising expedients to insure supply over open beaches for long periods of time despite reasonably bad weather and rough water.

Increasing the lift beyond that provided by the original Combined Chiefs of Staff (CCS) directive to COSSAC, in order that at least three assault divisions could be lifted on D-day, remained a major problem in COSSAC and SHAEF until D-day. The problem was solved finally by stepping up US and British production; by diverting 50 percent of the landing craft originally allocated to operations from the Mediterranean *(Anvil);* by rehabilitating derelict landing craft lying about the shores of England after they had seen better days in training; and, primarily, by postponing the target date of *Overlord* by one month, in order to gain the advantage of continued and increased production.

The COSSAC logistical planners devoted much effort to the solution of the problem of "bridging the water gap," that is to say, delivering ashore, dryshod, the trucks and other wheeled or tracked equipment brought in by the LCT and LST which would touch bottom rather far off-shore on the relatively flat beaches of Normandy. Various devices were explored, some developed; the Rhino ferry, a chain of US naval pontoons propelled by an outboard motor and so-called because of its characteristic horn-like hook for attaching additional pontoons, proved to be the best.

So concerned were the planners with the problems of supply over open beaches that the logistical planners of COSSAC at one time spent several weeks evolving the organization for a proposed US Far Shore Beach Group, which would develop and operate the beaches for maximum import. However, this study was soon overtaken by arrivals in the United Kingdom of the more efficient Engineer Special Brigades.

The most significant and spectacular solution developed by COSSAC for a pressing problem was the conception and design of the artificial harbors known as the *Mulberries.* The original appreciation and outline plan of *Overlord* had stated that the operation would be feasible on the earlier small scale of assault only if three conditions prevailed in Northwest Europe on D-day:

The German Air Force, particularly its fighters, would have to be appreciably reduced. (Air operations of the US Eighth Air Force and British Bomber Command, culminating in Operation *Pointblank,* saw to this.)

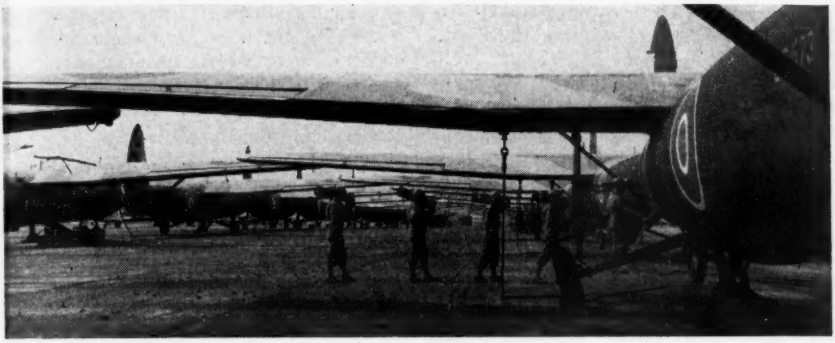
No more than 12 mobile reserve German field divisions should be present in France. (The great Russian offensive which opened 30 May 1944 assured this; in fact, only eight such divisions were present in France on 6 June 1944.)

Some expedient would have to have been devised to insure that supply over open beaches would not be interrupted by average bad weather or rough seas. *(Mulberry* was the answer to this.)

This third condition, originally recognized and emphasized by the COSSAC logistical planners, was seized upon by the British naval planner at COSSAC, Commodore Hughes-Hallet, who proposed that

Preceding Operation *Overlord*, logistical plans had to provide for the concentration of men and matériel. Above, General Montgomery addressing the 4th Division (US) in England.

Above, an engineer supply depot in England, 2 months before D-day. Below, a concentration of Dukws in a supply depot in England, 2½ months before the invasion.—US Army photos.



Logistical planning for *Overlord* included many provisions for transportation and supply. Above, gliders on a field in England are being loaded 2 months before D-day.

Above, gliders carrying supplies fly over Utah Beach on D-day. Below, a gasoline pipe line over the Rhine, one of the "arteries" of the combat force.—US Army photos.

the Allies construct their own ports by prefabricating them and erecting them artificially on the shores of Europe. At a conference in Scotland, with Lord Louis Mountbatten presiding, an original design for an artificial harbor was presented and approved and a committee headed by Brigadier Sir Wehrner was established to coordinate the planning and the production agencies involved in developing the project.

There were many early ideas for stilling the waters off the Caen beaches, including the proposed use of what was known as the Lilo breakwater, which consisted essentially of a rubber air-filled mattress which

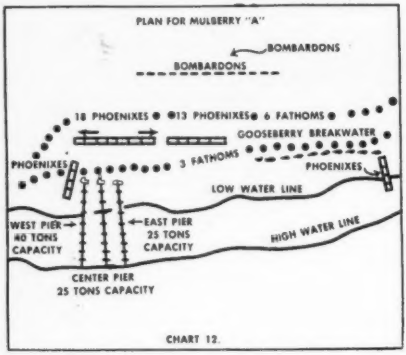


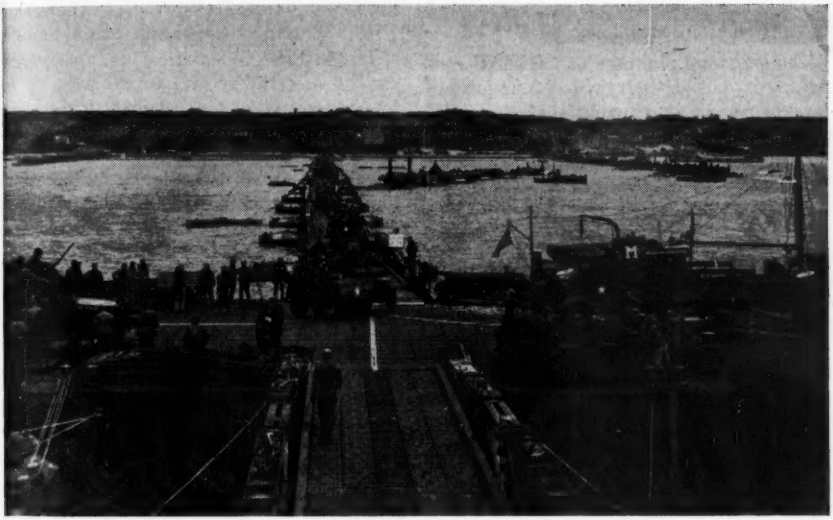
CHART 12

was to float at anchor offshore and act as a buttress between the rougher outer waters and the smoother anchorage inshore. Another idea was the bubble breakwater, which consisted actually of laying under the water compressed air pipe lines from which a wall of bubbles was to be emitted to still the waters. Finally, there were huge steel and concrete structures which were to be either moored afloat or sunk in series to form breakwaters.

Originally, there was to be but a single *Mulberry* located at Arromanches to serve the US and British forces jointly. But increasing requirements for import capacity and the early recognized principle that US and British lines of communication had better be developed independently from separate ports of entry soon demanded that two such ports be constructed, the second, the American one, at St. Laurent.

The American *Mulberry* (see Chart 12) consisted of three major breakwaters and three piers. Among its components were the so-called *Bombardon*, the 200-foot-long cruciform floating steel structures which were moored in line to form the outermost breakwater behind which Liberty ships could anchor in shelter. These weighed about 1,500 long tons each. Inshore from the *Bombardon* were the so-called *Phoenix*, huge concrete caissons, some as large as 60 x 60 x 200 feet and weighing from 2,000 to 6,000 long tons each, sunk in about 5½ fathoms of water to form an inner breakwater. Closest inshore were the *Corncob*, which were blockships sunk in about 2½ fathoms of water, including some 70 obsolete warships and merchantmen of the American, British, Dutch, and French fleets, one of them 40 years old. As originally designed, each *Mulberry* was to develop a capacity of 6,000 long tons per day by D+14. Although a severe storm demolished the US *Mulberry* prematurely, the British *Mulberry* was in fact producing 6,750 long tons per day by D+20.

In addition to the organic *Mulberries*, there were originally five small semicircular shelters, known as *Gooseberries*, each formed of sunken blockships and intended as protection for smaller craft and ferries in times of rough seas. Two of these five—one was off each of the five assault beaches—were subsequently expanded to form the *Mulberries*. So sensational was the idea of the *Mulberry* that SOS engineers soon conceived on an even more extravagant scale a similar plan for the development of a colossal artificial port in Quiberon Bay on the south Brittany coast. This project, known as *Chastity*, was never realized because events, both tactical and logistical (the long siege



The *Mulberry* floating port was one of the most unusual planned projects of the invasion. Above, the *Mulberry* off Omaha Beach is shown in operation 10 days after the initial landings. Below, the *Mulberry* on 21 June 1944, after being wrecked by a severe storm, a setback that had to be anticipated in logistical plans.—US Army photos.

of Brest and the onset of winter), rendered its construction infeasible.

The logistical planners at COSSAC considered it one of their prime functions to develop means of insuring that the logistical support of the assault and other critical phases of the operation could in fact be provided. They therefore made detailed studies of these phases and developed plans for the logistic support of them on a day-to-day basis. They also recognized that bulk POL facilities were a valuable expedient by which the critical capacities of ports, roads, and vehicles could be conserved. They accordingly developed plans for underwater pipe lines, 25 of which were eventually laid between Dover and Holland, and for ship-to-shore and inland pipe line systems which became the arteries of the combat forces.

Similarly, the COSSAC logistical planners concerned themselves with planning emergency measures which should be provided and which might be used to prevent major disaster in the event tactical operations should not succeed as the over-all strategy contemplated. Among these emergency measures were the use of supply by air, utilizing troop carrier and other types of aircraft diverted from airborne and bomber missions; provisions to crash-land upon the shores or in the open fields of Europe small ships or large gliders carrying pre-planned balanced supply loads; the provision of floating reserves off the assault beaches, consisting of balanced supply loads in dumb-barges towed across the Channel and anchored off the critical areas; the early establishment ashore of the maximum levels of reserves that shipping and import capacities could handle.

The COSSAC logistical planners prescribed how the service forces were to be integrated with the combat forces for initial operations into Europe. During the assault phase from D-day to approximately D+14, the Advance Section of Communications Zone (ADSEC) was to be attached to First US Army and, in effect, to operate the Army Service Area for it. During the second phase, approximately D+15 to D+41, ADSEC was to operate under Forward Echelon Communications Zone, which in turn was attached to First US Army Group (FUSAG). This latter arrangement never worked as planned because of the failure of Com Z and FUSAG to agree on responsibilities. Finally, during the phase D+42 to D+90, FUSAG and Com Z were to become coordinate commands mutually cooperating under SHAEF.

When SOLOC became operational in France, G-4 (Plans Branch) SHAEF was called upon to provide the basis for the reallocation of US service troops between Com Z and SOLOC. This it did by combining factors such as divisional slices, priorities of logistical support, relative indices of logistical activity, and comparative efficiency quotients of the American service troops available in Com Z and of the Italian prisoners of war and French service troops available as part of the SOLOC strength. The net result was a conclusion that there should be a transfer of some 20,000 service troops from Com Z to SOLOC, the detailed implementation of which was arranged by the Service Troops Branch of G-4 SHAEF.

Modern war presents a problem of priority and sequence in mounting an offensive against the aggressor's forces and the sources of his strength. In the event of war, the United States has no choice but . . . an attack of increasing violence, growing intensity, and widening global dimensions.

Secretary of Defense Louis Johnson

STATISTICS FOR THE GENERAL STAFF OFFICER

Lieutenant Colonel William A. Glass, Jr., *Signal Corps*
Former Instructor, Command and General Staff College

IF TED Williams had been at bat 1,000 times and hit safely 408 times, what is he batting? Right, it's .408. This is a statistic. We call it an average. The statistician calls it a mean.

The interesting fact here, aside from baseball, is that with one figure, .408, we have summed up, to a large extent, what the Red Sox slugger has accomplished in 1,000 times at bat. To make the summary complete, we would have to create a table showing home runs, triples, doubles, singles, walks, runs batted in, hits, times hit by pitched ball, strike outs, etc. However, with this one figure, .408, we know generally everything in which we are interested.

Again, .408 is a statistic. The method of obtaining it, dividing 408 by 1,000, is a statistical technique. This article is concerned with whether or not a working knowledge of statistical technique is useful to the general staff officer.

To answer this question, let us first review the basic duties of a general staff officer. These basic duties may be grouped under the following main functions:

1. Providing information required by the commander to plan and conduct operations.

2. Making a continuous study of the situation for anticipatory planning.

3. Submitting recommendations as to policies, plans, and orders to the commander in compliance with directives or on his own initiative.

4. Translating the decisions and plans of the commander into orders and causing them to be disseminated to the command.

5. Exercising such supervision as may be directed to ensure carrying out the intentions and policies of the commander.

Now, if statistics contribute to the efficiency of the general staff officer in carrying out these basic duties, it naturally follows that the general staff officer should have at least a certain amount of information on the subject. The remainder of this article will explain the relationship between statistics and the basic general staff duties.

One of the broad definitions of statistics is that it is a science which is concerned with the interpretation of data, and with the treatment of data so that needed interpretation of them can be made. A common misconception about statistics is that it is a new science and that its use is dependent upon professionally trained statisticians. Nothing could be farther from the truth. Newspapers have for years carried daily columns of statistics designed for the layman, such as temperatures, sports statistics (baseball batting

The general staff officer should have some knowledge of the basic statistical concepts in order to understand the experts and to apply their findings to aid his own commander in accomplishing his mission

averages or relative standings of teams or players), stock market activities, and traffic accidents.

A professionally trained statistician is not needed to use or interpret basic statistical data intelligently, any more than a professionally trained mathematician is needed to interpret basic mathematical techniques. However, as in the field of mathematics, after a certain point is reached in complex statistical studies, only the professionally trained statistician is capable of computing, analyzing, and interpreting the subject data. Another common misconception concerns the mathematical background required to use or to interpret statistical studies or techniques. To use the basic statistical techniques (including simple correlations) no mathematics is required beyond that necessary to add, subtract, multiply, divide, extract a square root, substitute in and solve simple algebraic equations, and construct elementary graphs. This is approximately the mathematical knowledge normally acquired before completing the freshman year in high school. To interpret statistical data, even less mathematical ability is required. It is with the interpretation of data that the general staff officer is mostly concerned.

At the lowest echelon normally having a general staff—the division—only the most elementary techniques are required. For our purpose, we will consider, in relating them to the five basic staff duties, that these "most elementary statistical techniques" include only tabular and graphical presentation, averaging, and variability.

Tabular Presentation

Let us assume a situation where a division which has been in combat in a certain theater for a total of 50 days is preparing plans for a new campaign in a different theater. We will limit our interest to the planning of supply for ammunition for the 105-mm howitzer MIA2. We will use the planning assumption that the same rate per weapon will be required in the new theater as was required in the past operation.

Figures available in rounds expended per howitzer for the 50 days in chronological order are as follows:

36	44	33	105	55
29	34	38	43	65
19	36	31	43	77
58	45	46	42	49
66	45	43	27	48
82	47	49	33	21
15	49	59	35	23
11	50	62	41	47
42	40	73	43	25
47	42	88	54	39

Only after a careful and lengthy study would these figures mean much to the G-4 or to anybody else. We will apply our "most elementary statistical techniques" to these "raw data" in order to make them more meaningful.

Our first step is to prepare a table.

105-mm M1A2 Ammunition per Weapon Expended by X Division during period _____ to _____.

Rounds per Weapon	*Days*
100-109	1
90-99	0
80-89	2
70-79	2
60-69	3
50-59	5
40-49	20
30-39	9
20-29	5
10-19	3

From the above table, we can tell with little effort that our maximum consumption did not reach 110 rounds per weapon per day, that on 20 days we used between 40 and 49 rounds, that on 42 days, or 84 percent of the time, we used less than 60 rounds per weapon per day.

The Graph

This same information may be presented graphically.

The graph, while providing the same information as the table, has the advantage of greater simplicity and clarity. It also provides a more interesting presentation and one more pleasing to the eye.

Presenting an Average

Our next step is to present an average. The mean number of rounds expended per weapon per day was 45.1. This one figure sums up, as did Ted Williams' batting average, the activity in this field for the whole 50 days. In this case, no other single figure is as useful for future planning as is the mean. The mean is obtained directly from the table by use of a simple statistical technique.

Variability

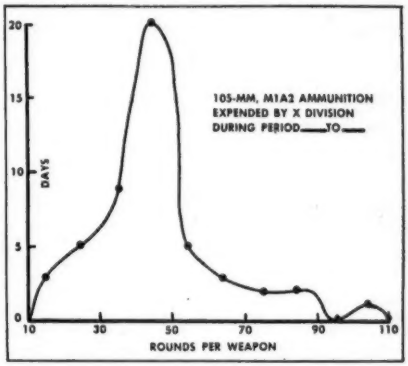
The last of our four most elementary concepts is variability. An average, or a measure of central tendency, tells us how the data tends to centralize. A measure of variability tells us how the data tends to vary or spread out from some measure of central tendency. One measure of variability is standard deviation. In this case, the standard deviation is 17.8. This one figure, in conjunction with the mean and within certain limits of error, tells us many things. Among them, that on 68 percent of the days ammunition expended per weapon will vary between 27.3 rounds and 62.9 rounds; that on 95 percent of the days the number of rounds expended will not exceed 80.7.

The concept of variability of measures is, however, of far greater significance than completeness of description of a set of data. It is essential for the comparability of measures, the determination of the reliability (dependability) of statistical measures, and the accuracy with which measures can be used for predictive purposes.

Use by the Staff

From this example, the following truths appear evident:

With only our four most elementary statistical concepts (tabular and graphical presentation, averaging, and variability) we have a valuable tool for providing information required by the commander to plan and conduct operations. By no other means can we present so clear and so concise a picture of what is happening or what has happened as we can with our table or graph and our two figures: one for central tendency, one for variability. The same techniques are invaluable in maintaining a continuous study and in submitting and backing up our recommendations. In these first three basic general staff duties, we not only save our time and the commander's time but we also—which is even more important—have an invaluable tool to aid us in coming up with the best possible recommendations.



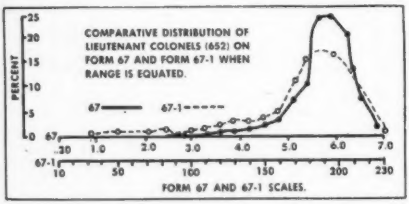
In the fourth basic duty, statistics is limited in its use in translating decisions and plans into orders. However, in disseminating information to lower, adjacent, and higher echelons, it offers all the advantages that it has with regard to providing information required by the commander.

In exercising such supervision as may be directed to ensure carrying out the intentions and policies of the commander, statistics is again a most useful tool. By means of only the elementary techniques, previously described, a high degree of statistical control may be maintained.

Our inescapable conclusion is that, at the division level, elementary statistical techniques are useful to the general staff officer. He should have at least a speaking acquaintance with these concepts and with the interpretations that can be made as a result of carrying out these techniques.

Higher Level Use

Now let us look at a problem at the Department of the Army level. When officer



efficiency rating forms were being revised in 1946, one of the essential steps in the preparation of a new form was to compare it with the old one. A study was made titled: "A Comparison of Officer Efficiency Ratings Obtained with the WD AGO Form 67 and the WD AGO Form 67-1 at the Regular Reporting Period of 30 June 1946." We will examine this report briefly to see how useful statistics are in effecting this comparison. *

The first technique used was sampling. A criterion was obtained, based on a sample of 15,000 officers. Officers known to each other were selected in groups of approximately 10 to 40 men and asked to rate each other on designated criterion scales, including (1) the OE (Officer Efficiency) Index, by indicating actual ranks of upper and lower thirds, and (2) the OAR (Officer Average Rating), by indicating rank position in a typical group of 20 officers of the same grade and general type of duty assignment.

The next step was to set up a Standard Score Scale (based on standard deviations) and compute standard score means for each grade of officers from colonel through second lieutenant for a sample of 4,208 officers on the following criteria and rating scales:

1. Form 67.
2. Officer Efficiency (OE) Criterion.
3. Officer Average Rating (OAR) Criterion.
4. Section III, Form 67-1 (Indorser).
5. Section III, Form 67-1 (Rater).
6. Section II, Form 67-1.

This resulted in the discovery that Form 67 scores were most highly related to grade, the OE Index was second, OAR third, Section III of Form 67-1 fourth, and Section II of Form 67-1 was shown to be the least related to grade. This finding was encouraging to the new Form 67-1, since to the extent that ratings merely reflect grade, they are both poorer and more expensive indicators than is grade itself. To be useful, a rating should indicate merit independently of grade, e.g., indicate which first lieutenants should be given accelerated promotion and which majors should be eliminated from the service.

This important finding on relationship to grade was borne out by the next step. This step was to compute correlations (measures of relationship) of the scores on Form 67 and 67-1 and of the OE Index with the grades of the officers scored. These findings were presented in tabular form by arm or service and served as further proof that Form 67 and the OE Index scores were both much more highly

* The author wishes to express his indebtedness to C. Paul Sparks and Dr. R. V. Wherry, who were largely responsible for Personnel Research Section Report No. 725, which forms the basis for the latter portion of this article.

related to grade than were the Form 67-1 scores.

After confirming the findings concerning relationship to grade, the succeeding step was to determine the relative reliability of these forms under field conditions. This was accomplished by computing the means, standard deviations, and critical ratios (the ratio of the difference between two means to the standard * error of the difference) for the OE Index and the rating forms under experimental and actual rating situations. After expressing these computations in tabular form, it was possible to conclude that the Form 67-1 leads to reliably less bias than does Form 67 under actual rating conditions.

The next step, and the last one with which we will concern ourselves here, consisted of preparing graphical comparisons of the distributions for Form 67 and Form 67-1, one of which is shown above.

This series of graphs indicated that Form 67-1, with the longer flat tail on the left, will be more discriminative of extreme cases than will Form 67, particularly at the low end of the distribution. This is, of course, vitally essential to the proper functioning of any "selection out" system.

Many further statistical techniques were used in effecting this comparison between Form 67-1 and Form 67. All results pointed in the same direction, confirming the superiority of Form 67-1.

This statistical study is typical of the techniques used in the more complex type of investigation required at the Department of the Army level. Obviously, some knowledge of statistical concepts is of great benefit in making recommendations and decisions based on such a study.

* A measure of the accuracy or reliability of a computed measure based on a sample.

Summary

In this article, one example has been chosen from the field of supply and one from the field of personnel. It is conceded that G-4 and G-1 have more frequent need for a knowledge of statistical concepts than do G-3 and G-2. However, both G-3 and G-2 have frequent use for statistics, particularly in the field of statistical control.

Should every general staff officer be a professionally trained statistician? Obviously, no. In its higher levels, statistics is an extremely broad and complex field of its own. However, every staff officer deals with numbers and should, therefore, have some knowledge of basic statistical concepts so that he may talk to some degree the language of the experts and apply their knowledge and findings to aid his commander in the accomplishment of his mission.

Details are the task of the staff, and a real leader must be able to divorce himself from them. He depends on his collaborators for working out the necessary coordination and relies on them.

Field Marshal Montgomery

The Battle of Suomussalmi

By Victor Suomalainen, an eyewitness,
as told to
Lieutenant Colonel Arthur J. Peterson, *Field Artillery*
Instructor, Command and General Staff College

THE Finno-Russian Winter War of 1939-1940, considered as a whole, offers an excellent example for the study of Arctic warfare. In this war, two armies met under the most severe subarctic weather conditions imaginable. One of them, the Finnish Army, was familiar with and trained in arctic warfare. The Red Army at that time, from a practical standpoint, had almost completely neglected preparations for warfare under such conditions. To a surprising extent, the Russians depended on their superiority of numbers and material strength to secure a victory over a weaker opponent. In spite of this superiority, the Russians suffered a number of serious reverses at the hands of the Finns, who, although inferior in strength, were equipped for and were familiar with arctic conditions. This knowledge of the arctic was used by the Finns to great advantage.

The Battle of Suomussalmi is considered one of the most typical battles of the Finno-Russian war. It was fought between 11 December 1939 and 8 January 1940. In this area, the understrength Finnish 9th Division surrounded and destroyed the Ukrainian 163d Division, and at the same time, with a small portion of their force, the Finns prevented the 44th Moscow Elite Division from coming to the rescue of the beleaguered Russian forces. After finishing off the 163d Division, the Finns then surrounded and annihilated the 44th Division.

Firepower and Mobility

At the time of the Battle of Suomussalmi, there was a marked difference in the firepower of the Finnish and Russian divisions. The artillery firepower of the Russian division was about three times that of the Finnish division, and that of its mortars and machine guns was about twice as great. The following table shows their comparative firepower. (The strength of a Russian division at that time was 18,000.)

	Finnish division	Russian division
Rifles	11,000*	14,000*
Submachine guns	250	—
Machine guns	116	206
Mortars (81-mm to 120-mm)	18	30
Antitank guns (37-mm to 45-mm)	18	48
Artillery cannon	36	78
Tanks	—	50*

* Approximate

The most important difference between the Russians and the Finns, however, was in the mobility of their troops. This was most noticeable in their ability to make cross-country movements. It was an accepted principle in Finnish divisions that troops of all arms and services would be mounted on skis. Machine guns and mortars, together with their ammunition and tents for shelter, were moved in *ahkios* (snowboats) drawn by troops on skis. These *ahkios* were also used to evacuate the wounded. Artillery pieces, field kitchens, and other heavy equipment were moved on horse-drawn sleds. All motor vehicles were concentrated on the division level.

This arrangement made it possible for the Finns to make long cross-country movements in areas without roads. Opposed to this, the Russians lacked skis and sleds, and they had a large amount of heavy, motorized equipment in addition to tanks and artillery. The normal mode of cross-country travel for the Russian soldier was on foot, without skis. This made the Russian division essentially road-bound.

Terrain and Situation

The terrain on which the Battle of Suomussalmi was fought is typical subarctic wilderness. Coniferous forests cover about 90 percent of the area and roads are few. At the time of the battle, ice on the lakes was thick enough to carry troops. The usual temperature was about 30° to 40° below zero Fahrenheit, and the snow varied in depth from 3 to 4 feet. Movement on foot was extremely slow and exhausting. The average amount of daylight was from 5 to 6 hours daily, and frequent snowstorms hampered visibility.

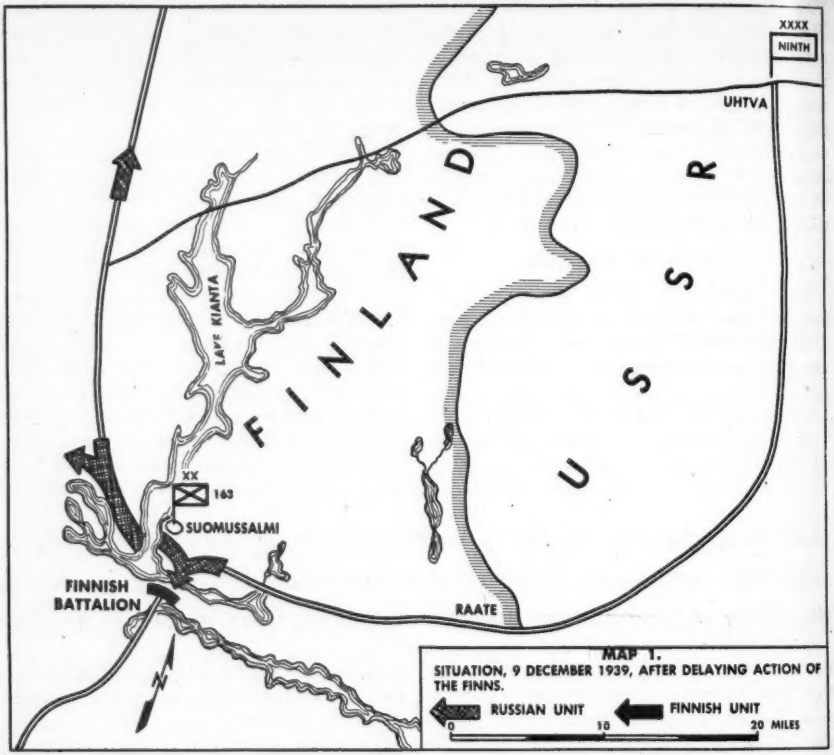
Skillful application of the principles of arctic warfare enabled a small but aggressive Finnish force to defeat a superior enemy in the Battle of Suomussalmi during the Finno-Russian War of 1939-1940

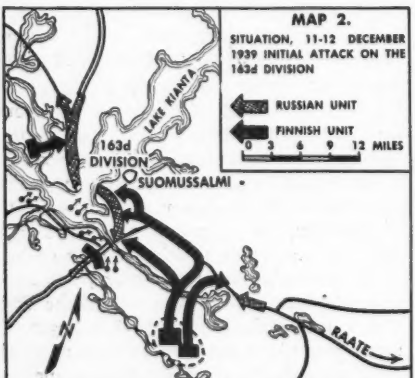
There are two narrow roads leading from Russia to the village of Suomussalmi (Map 1). The Russian plan called for the advance of the Red Ninth Army through this area from the Murmansk railroad to the Gulf of Bothnia, 150 miles west of Suomussalmi. The advance of the Ninth Army was led by the 163d Division along these two roads. Two infantry regiments, the 662d and the 81st, with a battalion of tanks and cavalry, advanced along the northern road. The Red 759th Infantry and the division reconnaissance battalion advanced along the southern road. They were met by one Finnish infantry battalion which for 7 days kept them from reaching Suomussalmi. Fighting was severe, and at the end of that time the Finnish battalion was defending behind the frozen waterways to the southwest of the village. It was only by extreme efforts on the part of the Finns that the Russian attacks over the waterways were repulsed.

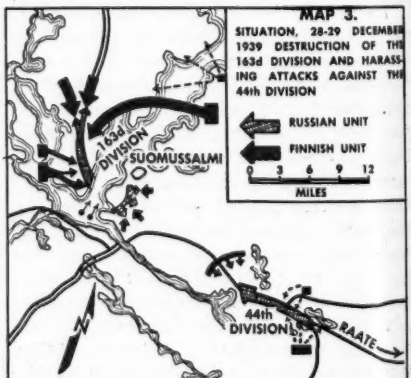
At this time, 10 December, the 9th Division from the reserve of the Finnish High Command arrived on the scene. The 9th Division was about 60 percent understrength, having sent two of its regiments to other sectors earlier in the war. Its total strength at this time was 4,700 men, and it was not until 25 December that the division was brought to a strength of 11,500 men. It was extremely deficient in armament, having no artillery, tanks, or antitank and antiaircraft weapons. But the 9th Division did have units trained in the use of these weapons, and the units later were equipped with excellent Russian matériel captured during the ensuing battle. Ammunition supplies for these weapons were also captured.

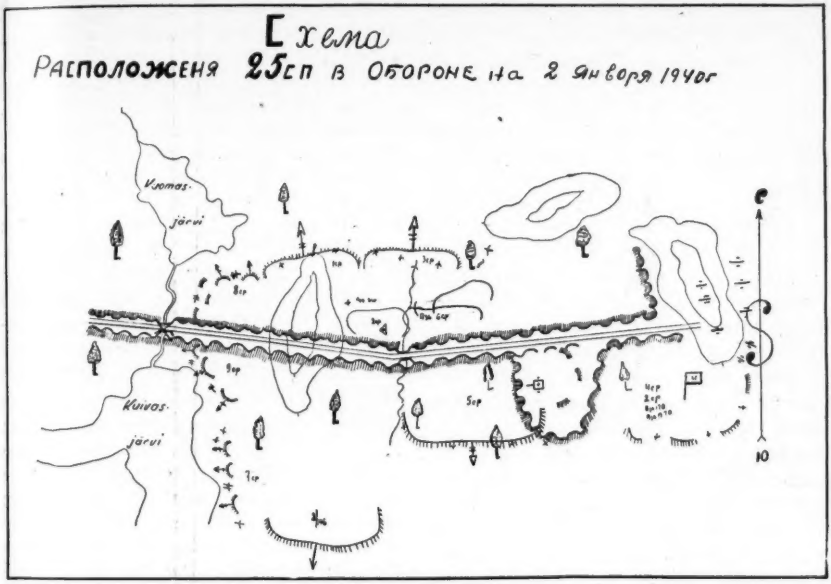
Finnish Attack

The Finnish attack began on 11 December (Map 2). During the night of 10-11 December, troops were moved to an assembly area southeast of Suomussalmi about 5 miles from the Russian line of communication. From the assembly area, the troops moved north in narrow formation through the forests until they reached the south road leading to Suomussalmi. There they met Russian forces, which had been rushed to the scene by motor transport, and soon defeated them. The main part of the Finnish force, a ski regiment, then began to move west along the road to Suomussalmi. A smaller force of about two companies advanced toward the east, where it set up


XXXX
NINTH
UHTVA
FINLAND
U S S R
LAKE KIANTA
XX
163
SUOMUSSALMI
FINNISH BATTALION
RAATE
MAP 1.
SITUATION, 9 DECEMBER 1939, AFTER DELAYING ACTION OF THE FINNS.
RUSSIAN UNIT
FINNISH UNIT
0 10 20 MILES

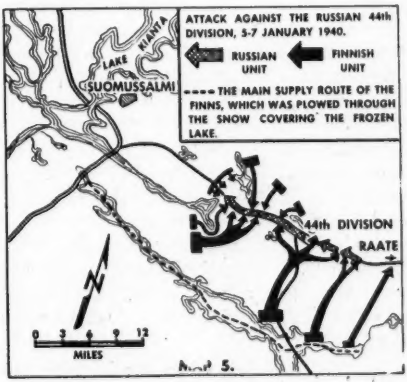

MAP 2.
SITUATION, 11-12 DECEMBER 1939 INITIAL ATTACK ON THE 163d DIVISION
RUSSIAN UNIT
FINNISH UNIT
0 3 6 9 12 MILES
LAKE KIANTA
163d DIVISION
SUOMUSSALMI
RAATE


MAP 3.
SITUATION, 28-29 DECEMBER 1939 DESTRUCTION OF THE 163d DIVISION AND HARASSING ATTACKS AGAINST THE 44th DIVISION
RUSSIAN UNIT
FINNISH UNIT
0 3 6 9 12
MILES
163d DIVISION
SUOMUSSALMI
44th DIVISION
RAATE



Map 4.—This is a copy of an original Russian sketch found by the Finns after the destruction of the Red 44th Division. It shows the defense plan adopted by the advance guard regiment, the 25th Infantry, after harassing attacks by the Finns began. The command post is shown in the lower right hand corner of the sketch. The other two regiments of the 44th Division were on the road behind the 25th Infantry, off the right of the sketch. The scale of the sketch was distorted by the Russians to show them occupying positions much farther from the road than they actually were. The two Finnish companies which held up the advance of the 44th Division occupied positions between the two lakes shown on the left of the sketch.

a defensive position on a ridge across the road flanked by two small lakes (Map 3) to prevent any further Russian movement along that road in the direction of Suomussalmi. The main force, advancing toward the village, met bitter Russian resistance and was halted, but the main object of the attack had been accomplished—one of the Russian lines of communication was completely severed. A simultaneous attack by a Finnish ski battalion was launched against the enemy's northern line of communication and succeeded in disrupting enemy movements, but the battalion was


ATTACK AGAINST THE RUSSIAN 44th DIVISION, 5-7 JANUARY 1940.
RUSSIAN UNIT
FINNISH UNIT
THE MAIN SUPPLY ROUTE OF THE FINNS, WHICH WAS PLOWED THROUGH THE SNOW COVERING THE FROZEN LAKE.
LAKE KIANTA
SUOMUSSALMI
44th DIVISION
RAATE
0 3 6 9 12
MILES
Map 5.

unable to completely cut the road because of insufficient strength.

The next phase of the battle, which lasted about 2 weeks, was marked by heavy fighting at the main point of contact in the vicinity of the village. Finnish patrols and raiding parties up to the size of a battalion continually harassed the Russian forces and disrupted their one remaining line of communication both day and night. The object of the Finns was to gain time until the 9th Division could be brought up to sufficient strength to launch a full-scale attack and to prevent the Russian 163d Division from disengaging. That this was successful is shown by later events.

On 22 December, the Russian 44th Division appeared on the south road from the direction of Raate with the mission of attacking the Finns and extricating the 163d Division from its predicament (Map 3). This caused the Finns great concern, as the only troops which stood in the way of the 44th Division were the two companies which had previously been detailed to set up a defensive position on the south road. This position lay behind a small brook in the forest and the snow in front of the position was deep. It had been improved by the construction of abatis from trees in the surrounding forest as a defense against tanks. The position had also been reinforced with additional machine guns and mortars. To prevent this position from being outflanked, the Finnish commander immediately ordered a number of small-scale attacks against the flanks of the 44th Division. While the defense position successfully repelled a number of Russian attacks, small groups of ski troops, as well as company- and battalion-size ski detachments, were sent to attack the flanks and rear of the heavily road-bound 44th Division. The Finnish ski troops appeared from the forests continuously, both night and day, and caused great confusion among the Russians.

On 25 December, when the Finnish 9th Division was brought up to a strength of 11,500 men, it was ordered to attack and to cut the north road into Suomussalmi, which was the only remaining supply route for the Russian 163d Division (Map 3). The attack was successful, and the Russian division was soon surrounded. The Finns continued to attack the Russian perimeter and forced the Reds into successively smaller areas. The 163d Division was left with a minimum of supplies and no means of re-supply. The troops were exhausted by exposure to the severe cold, and were subjected to continuous attack by the Finnish ground forces. Consequently, the fighting energy of the Russians was quickly depleted.

The Russians made a desperate attempt to break out of their encirclement onto the ice of Lake Kianta on 28 December. Their heavy equipment, artillery, and motor transport was left behind on the road or in the forest. Fire from Finnish troops and armored cars on the ice and air bombardment struck at the defenseless masses of Russian troops struggling through the snow which covered the ice of Lake Kianta. Stragglers and frozen Russian soldiers were found in the forests for many days afterward. Some small groups eventually made their way to the Russian lines, but to all intents and purposes the Ukrainian 163d Division was completely destroyed. As war booty, the Finns recovered, among other things, 35 cannon, 250 motor vehicles, and about 600 horses together with their sleds and other conveyances.

Attack on the 44th Division

The Finnish commander immediately directed his attention to the 44th Division, which, during the final stages of the destruction of the 163d division, was being harassed by Finnish flanking attacks. The Russian commander was misled by the ferocity of these attacks into a belief that he was confronted by a much larger force. Although on 27 December the Russian

Although inferior in numbers and matériel to the Russians, the Finns won the Battle of Suomussalmi by skillful employment of the principles of winter warfare. Above, road jam near Raate after destruction of the 44th Moscow Elite Division. Lower left, wrecked vehicles of the 163d Ukrainian Division. Lower right, 2 Russian prisoners.

commander had issued orders for an attack to relieve the 163d Division, he revoked those orders and went into a defensive position at the very time that the 163d Division was being annihilated only 8 miles away! (Map 4.) This phase of the battle presents an astonishing picture: on the one hand, the passiveness of the Red 44th Division commander; and on the other hand, the efficiency of the program of active harassing by the Finns. Although small in number, the reckless Finnish ski detachments gave the Russians an exaggerated picture of Finnish strength and were successful in aborting the attack plans of an entire division at a crucial time. This soon became fatal for the 44th Moscow Elite Division.

Immediately after the 163d Division was destroyed on 28 December, the Finnish 9th Division began preparations for the attack on the Russian 44th Division. Using the concealment of darkness to best advantage, the Finnish troops executed cross-country movements by ski to previously reconnoitered assembly areas on both flanks of the 44th Division (Map 5). A road was plowed along the lake line south of and paralleling the main road to permit the movement of motor transport. On reaching its assembly area, each attacking unit prepared trails leading directly to the road occupied by the 44th Division. To withhold information about the existence of these trails from the Russians, the trails were not completed as far forward as the enemy's observation. The end of each trail was secured by a trailbreaking detachment, usually a platoon, until the attacking unit arrived at that position.

The general Finnish attack on the defense positions of the 44th Division was launched early on the morning of 5 January 1940. In spite of the 4-foot snow and the 40° below zero temperature, Finnish units advanced on skis in narrow columns to the road controlled by the enemy. Finnish intelligence sources had determined that three infantry regiments, the division artillery, a number of tanks, and the division headquarters occupied a space on both sides of the road about 6 miles in length.

Farther back along the road, the Reds had prepared a number of platoons and company-size defensive positions.* At each point of attack shown in Map 5, the Finns first cut the road, opened a gap, felled trees on both sides of the gap to form an abatis, and then mined the abatis. The Russians attempted to force their way through the abatis with tanks, but the first tanks to reach the obstacles were destroyed and added further to the effectiveness of the abatis.

Because of Finnish fires, the deep snow, and the heavy forest on both sides of the road, the Reds found it impossible to bypass the obstacles. At the end of the first day of fighting, the Russian force found itself divided into a number of small isolated groups incapable of mutual support. The Finns called these groups "*Mottis.*" This can be translated as "wood piled up ready for chopping." The Russians fought desperately to regain contact between their isolated groups. The fires of the Finnish troops which defended the flanks of the gaps repulsed the attacks of the slow, snow-wading Russians, causing heavy losses to the attackers.

Immediately after the gaps through the Russian positions had been cut, the Finns reorganized their main body and launched new attacks against encircled bodies of Russian troops. This was made possible only by the fact that the Finns were mounted on skis. These new attacks, usually executed with a battalion or a company, were directed at the 44th Division headquarters, the artillery positions, and the supply points. Before long, retreating Russian artillery batteries, heavy motorized equipment, and hundreds of dead

* The 3rd Infantry Regiment, sent by the Russian Ninth Army to reinforce the 44th Division, arrived on the scene just in time to be surrounded and destroyed with the rest of the force.

horses clogged the road and made movement along it virtually impossible. The severely cold weather and the cutting of their supply lines hastened the destruction of the Russians.

On the third day of the attack, destruction of the 44th Division was complete. The merciless freezing weather and swift Finnish ski patrols cut off the escape of the few who attempted to flee through the deep snow into the forests. A partial list of what this division lost to the Finns includes 70 cannon, 50 tanks, 270 pieces of motorized equipment, and about 1,000 live horses.

The Russian losses in this area were so severe that shortly after the battle it was possible to move the Finnish 9th Division to an entirely different sector of the front. Only one Finnish battalion was left to protect the Suomussalmi sector, which was over 50 miles wide. This was the same disposition of troops that was in effect prior to the Battle of Suomussalmi. The total Russian losses for the entire battle were about 27,500 men killed and about 1,500 prisoners of war. Finnish losses for the same period were about 2,700 killed and wounded.

Causes of Russian Defeat

The Battle of Suomussalmi has been called "The Cannae of Arctic Warfare." Judging by the results, it is undoubtedly worthy of the name. Seldom in modern warfare is such a decisive and complete victory gained over an enemy with such vastly superior numbers. It is proper, therefore, to determine the basic causes for the final outcome of this battle.

One of the basic causes for the Russian defeat was their extreme lassitude or negligence in making proper preparations for arctic warfare. They had apparently failed to comprehend the magnitude of the demands of arctic warfare on specialized training and equipment. The winter equipment of the Russian troops was characteristic of their superficial preparation for winter combat. Many of the Russian troops wore summer footwear. Naturally enough, this resulted in frozen feet, and lowered morale and fighting ability. The problem of winter mobility was grossly neglected. To illustrate this, the trucks of the 44th Division contained several hundred pairs of skis, apparently intended for the Russian scouts. The scouts, however, were not taught how to use them. Large boxes of new ski instruction manuals were found by the Finns, unopened. The inevitable result of this was that in heavy snow the Russians were badly road-bound. The Russians should have known from experience in their own country that there are few roads in the arctic. Generally, Russian infantry was able to move only about 300 to 400 yards from the road on either side, and its speed of advance through deep snow by foot was extremely slow. No warm tents were provided for the troops. Men were forced to dig snow caves to keep warm, and they quickly lost much of their fighting energy in the process. Equipment for plowing snow and opening roads was nonexistent or very primitive. The result was that it was exceedingly difficult to move artillery and motorized equipment into positions off the roads.

The Red commanders and troops sent to face Finland's subarctic conditions found a very sparse road net, few settlements, deep snow, severely cold weather, and densely forested terrain. They were confronted with insurmountable problems of whose existence they had not imagined. They placed their dependence on superiority of numbers, firepower, and matériel, not realizing that this was not enough. They were unable to deploy and advance in the roadless, deeply snow-covered terrain, and thus they failed to use their entire strength to the best advantage. Their movements were slow and road-bound. Their fire did not reach maximum effectiveness in the heavy forests and deep snow against the highly mobile Finns.

During the entire battle of Suomussalmi, Russian air forces had air superiority. This fact, however, did not affect the situation. The forest-covered terrain, long nights, and quickly changing weather conditions were all used by the Finns to their advantage, and the effectiveness of Red air forces was reduced almost to insignificance.

The combat strength of the Finnish Army was based on mobility and the ability to maneuver. The over-snow mobility of the entire army was developed to the utmost. This made it possible to conduct maneuvers that were not dependent on roads. It opened the way to wide envelopments; at times, even the main body of the Finnish forces were moved to the Russian flanks or rear. It made possible the cutting of Russian lines of communication, the slicing up of their forces, and their subsequent defeat in detail.

The use of surprise attacks was a primary characteristic of Finnish tactics. The dense forests, long dark nights, snow storms, and other phenomena typical of the subarctic were invariably used to advantage by the Finns.

In contrast to the Russians, the Finns placed special emphasis on the importance of reconnaissance. Reconnaissance was almost always performed by ski patrols. Special emphasis in peacetime training was placed on operations in forests.

Harassing the enemy played an important part in Finnish combat. This forced the enemy to remain in a constant state of combat readiness and kept him from getting vitally needed sleep. Harassing attacks tended to mislead the Russians and kept them in a condition of uncertainty. An obvious example of the success of these tactics was when the 44th Division called off its attack and set up an all around defensive position at a critical moment in the battle.

Leadership and Morale

An account of this battle would be incomplete if it did not touch upon the chief factor in this clash between the Finns and the Russians—that is, the soldiers and their leaders. The Finn, a free soldier of a free country, showed himself, above all, to be the mental superior of the coerced Russian soldier. The Finn's daily struggle against arctic nature gave him physical strength and resourcefulness on the field of battle. His morale was braced by his patriotism and by his belief in the immorality of such an attack by a large powerful nation on a small country.

The Russian soldier had very little of this to bolster his morale. The Finnish command was characterized by its courageous leadership, its determination to destroy the enemy, and its ability to find ways and means despite marked deficiencies in weapons and equipment. These means they found in arctic nature. By making the best use of what he found, the Finnish soldier with courage destroyed the powerful mechanized Russian divisions, unsuitable as they were for arctic warfare.

It is as the mocking of fate. A Russian field manual of 1936 contains this paragraph:

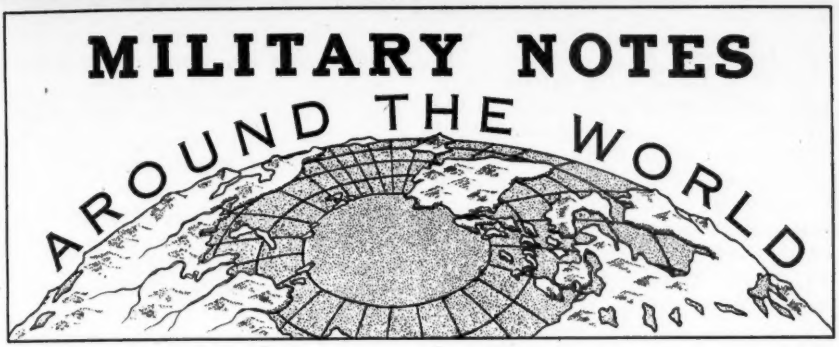
"Troops who have not received efficient training, or who are not properly equipped, quickly lose their fighting ability, as technical fighting equipment, unsuitable for winter conditions, proves to be a heavy burden for them."

Truer words were never written. That is exactly what happened to the Red Army itself in the Battle of Suomussalmi, and generally speaking, that is what happened in the entire Finno-Russian War.

Conclusion

Whether or not the Russians thoroughly learned the lessons in arctic warfare taught them by the Finns is open to conjecture. It is reasonable to assume that the present-day Russian Army places much greater emphasis on training in arctic warfare than it did prior to the Finno-Russian Winter War of 1939-1940.

MILITARY NOTES AROUND THE WORLD



UNITED STATES

Synthetic Fuels

A $1,341,637 contract for a survey in 37 states and Alaska, to determine suitable general areas for the manufacture of synthetic liquid fuels, has been awarded by the Department of the Army.

The Bureau of Mines, the agency having over-all responsibility for the synthetic liquid fuel program, designated the raw materials to be considered in the survey. These are coal, oil shale, natural gas, and oil impregnated strippable deposits. The Bureau of Mines also will select the processes of manufacture to be considered and will furnish other technical data. The United States Geological Survey and the Bureau of Reclamation will provide technical experts for consultant service.

Factors to be considered in determining the general area suitable for the manufacture of synthetic liquid fuels will include the availability of raw materials in sufficient quantity and quality as well as water supply, power, transportation, labor, housing, and markets. The survey of Alaska will be limited to the coal deposits in that portion of Alaska between the 142nd and 152nd meridians and south of the Arctic Circle.—Department of Defense.

Germ Disposal

The military's bacteriological warfare plant is faced with the same problem perplexing the atomic material factories—disposal of highly dangerous waste products.

This came to light recently in an Army report disclosing new details on the operation of the Germ Warfare Research Project at Camp Detrick, Md., where the Army started the bacterial warfare project during World War II. The laboratory currently is the only one operated by the military.

"Both the waste matter, which is extremely virulent, and the air, which comes in contact with it, must be sterilized to prevent contamination of operating personnel at Camp Detrick, and of citizens and property of the adjacent community," the Army said.

The Army has asked Congress for a total of $3,313,500 for new facilities and construction at Camp Detrick. This was the first official indication of intention to augment the bacterial warfare studies.

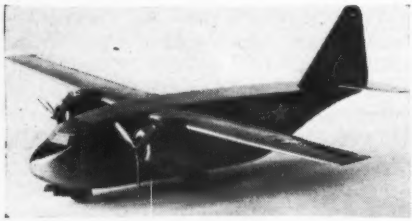
Outside of a $363,000 item for housing, the money is to be used for improving both the defensive and offensive aspects of war with bacterial weapons.—*The New York Times.*

Light Transport

The twin-engined C-122 "attack transport" has successfully completed initial test flights. This plane, designed and built by the Chase Aircraft Company, is a high-performance powered version of the CG-18A glider (MILITARY REVIEW, June 1948, p. 70). It has been built to Army and Air Force specifications for economical transport of troops and equipment into forward areas, where prepared landing strips are not readily available.

The Army has long been interested in the development of a powerful glider which could be flown into forward areas under its own power, land, discharge its cargo and then be abandoned.

The use of gliders as such often proved



C-122 "attack transport."—US Air Force photo.

impractical in World War II, when even a minute miscalculation on the part of the glider pilot brought disaster to the ship. An error of only a few feet at times placed the ship within the range of enemy gunfire, and even within enemy lines. It is thought that the use of powered planes will in most cases obviate such incidents.

The C-122, through advanced technical designing, is capable of landing and taking off from extremely short fields. It can carry a 10,000 pound payload and cruise at 200 miles an hour. It carries a crew of two and has a service ceiling of 23,000 feet. Power is supplied by two Pratt and Whitney R-2000, 1350 hp engines.—*Armed Force.*

A-Bomb Cancer

A shorter life and earlier appearance of cancer are likely to be the fate of atom bomb survivors, a member of the US National Cancer Institute announced recently.

The scientist disagrees with "people in responsible positions" who have recently been quoted as saying that the hazards of an atomic bomb explosion are comparable to other hazards of war and therefore there is no need to be alarmed over them.

"There is a vast difference as far as effects later in life are concerned," he stated. "Usually, the survivors of an explosion by ordinary bombs may, in the vast majority, not expect any special ill-effects later in life. True, some may be crippled by loss of limb, but they will adjust and they will be able to live their full life expectancy.

"In other words, the body will 'forget' the injury received and the individual will live on as though the injury had never happened. This, unfortunately, is not true in an atomic bomb explosion in which the body is exposed to penetrating radiation. The body will 'remember' the injury received."

A definite correlation between total dose of radiation and life span was shown in experiments in which the whole bodies of animals were exposed to radiation, as they would be in case of an atomic bomb explosion, for a short time. The time of exposure was a matter of minutes. No experiments were done with exposure time comparable to that of an atomic bomb which is about a millionth of a second.

"The greater the exposure at a given age, the more the life span is shortened," the report stated.

"This, in severe cases, may mean a loss of many years of life. Furthermore, in the animals used, cancer occurred at an earlier age than in non-irradiated control animals."—*Science News Letter.*

Amphibious Helicopter

With its new wheels prominently displayed in the photo at the left, the Air Force's first amphibious helicopter, the Sikorsky *H-5H*, is shown making a routine over-water flight. The photo at right shows the same plane just lifting from the water after a routine landing at sea. The blisters shown fore and aft of the engine serve to widen the fuselage so that three litter patients may be carried. Two litters are carried forward and one aft. The ship is also equipped with a hydraulic winch, and when rough terrain or seas make landing impossible, it can hover motionless over the area and haul survivors up.—Department of Defense photos.

Bail Out at 600 mph

A Navy pilot recently bailed out of a jet plane speeding more than 600 miles an hour and lived to tell about it.

Officials believe this is the highest speed at which any man has escaped from an airplane and survived.

The pilot was flying at 40,000 feet when his *Banshee* jet fighter went out of control. The plane went into a spiral dive at more than 600 miles per hour. It lost 10,000 feet before the pilot could escape.

To get free of the plane, he used a mechanical bailout device called a pilot ejector seat. A powder charge blows the seat and pilot out of the plane.

The pilot then opens his parachute and lands.—*The New York Times.*

Survival Rations

The Quartermaster General recently announced development of two ration kits designed to "keep alive" men operating in the arctic or the tropics. QM research found that "protection from exposure, maintenance of morale, and water supply are more critical factors in survival than the physical need for food." The rations consist of the following items:

Arctic (SA-2): two cereal bars, date-apricot bar, sweetmeat bar, almond-chocolate bar, starch-jelly bar, bouillon, coffee, tea, candy-coated chewing gum, sugar tablets, cigarettes, and matches.

Tropics (ST-1): tea, coffee, jelly, gum, sugar, cigarettes, matches, and water purification tablets.—*Infantry Journal.*

Electronic Navigation

Ranking officers of the nation's armed forces stood around a table-like glass-topped cabinet at Hampton, Virginia, recently to observe a new development in electronics that promises to revolutionize marine navigation. They saw a model ship move slowly and evenly across a marine chart that outlined the waters and shore line of Hampton Roads. The model ship traced with near-perfect exactness the course and each maneuver of a Department of Highways ferry in a cruise from Old Point Comfort to a landing near Norfolk.

The tiny ship was the principal feature in a device known as a raydist plotting board. The board is designed to give "eyes" to ships at sea so that they may pierce any kind of weather.

The supervising technicians at the demonstration told how the model could mirror so accurately—within one foot in a mile—each movement of the real ship. They showed how:

1. A small radio transmitter installed on the full-sized vessel sent its signal to receivers on shore, the signals being used to fix the ship's position.

2. Devices known as servo mechanisms picked up the data of the shore receivers; the servo mechanisms then moved the model.

3. By watching the model maneuvering on the chart, an observer on shore could follow the course of a ship miles away with accuracies heretofore unobtainable with all known methods of navigation.

The technicians explained, too, that a similar raydist plotting board on the bridge of the ship whose course was being traced allowed the skipper of the vessel to see what he was doing at all times.

This electronic "mirror" is expected not only to assure hitherto unobtainable safety in the sea lanes, but also to be useful for oil exploration, hydrographic surveys, and river and channel charting operations.—*The New York Times.*

B-36 Missile

The chairman of the Defense Department's Research and Development Board said recently that the United States is developing an "exceedingly important" guided missile which the B-36 strategic bomber can use to protect itself against speedy jet fighters.

He said his board is supervising research on four general classes of guided missiles that "are in various stages of development." He described as exceedingly important the "air to air" missile, "which may well become the principal artillery of air combat."

"The speed of jet fighters gives them both an offensive and defensive advantage over the larger and slower bombers," he said.

But if the bombers are armed with missiles which can be launched against these fighters at considerable range, and if the missiles automatically steer themselves toward the attacking fighter and explode a powerful war head at contact or in close vicinity, then again we have an improved countermeasure to protect the bomber against the improved attack.

"This is of great importance to us, since long-range strategic bombers are a very significant element in our military arsenal," the official said.—*The New York Times.*

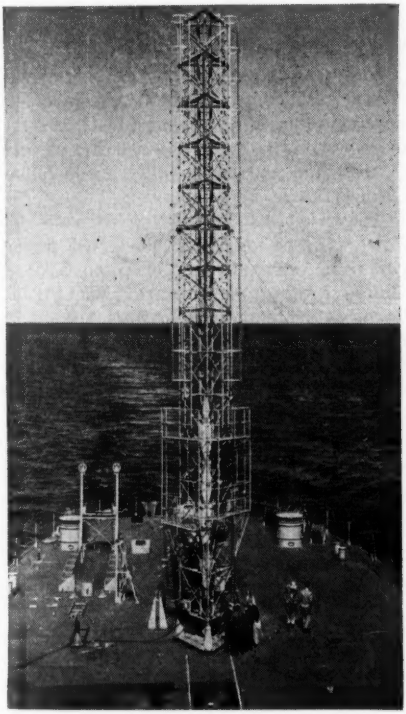
Naval Research

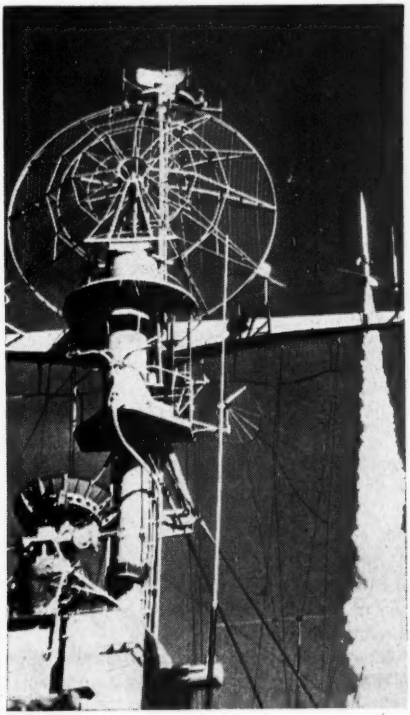
Research on a "completely new" type of propulsion for submarines is being considered by the Navy. The project, described as abnormally hazardous and secret, calls for the construction of new submarine power plants and test installations at Annapolis.

The Navy also tested a device which would reduce the rolling of ships by 80 percent. It consists of two pairs of tanks on opposite sides of a ship between which electronic controls would transfer ballast water to counterbalance the rolling motion.—*Infantry Journal.*

Rockets Fired at Sea

Rockets fired from the deck of the USS *Norton Sound* (MILITARY REVIEW, March 1949, p. 67), a converted seaplane tender fitted out specially to study the launching of guided missiles at sea, have reached altitudes of more than 65 miles and have provided new data about cosmic ray intensity.





Left, the launching tower on the deck of the ship with an *Aerobee* rocket ready to fire; right, the rocket taking off for a flight to an altitude of 65 miles.—US Navy photos.

The firing of the rockets took place as the ship cruised 700 miles off the west coast of South America.

Recordings were taken at high altitudes by telemetering equipment carried in the rockets. The rockets fired were pencil-shaped *Aerobees*, a missile type developed for the Navy by the Aerojet Corp.

Preliminary examination of the data by civilian technicians was said to indicate that the cosmic ray intensity above the atmosphere at the geomagnetic equator, where the firing took place, was about one-third that found above the White Sands proving grounds in New Mexico. Previous experiments with balloons and planes had indicated that the intensity of the geomagnetic equator was only one-sixth or one-eighth of that at the White Sands location.—*The New York Times.*

Piston—Jet Engine

An airplane engine which delivers more than 4,000 horsepower to a propeller as well as several hundred pounds of jet thrust, is being developed for the US Air Force by Pratt and Whitney division of United Aircraft Corporation.

Known as the R-4360-VDT (Wasp Major-VDT), the new piston-jet propulsion combination consists of a 28-cylinder Pratt and Whitney R-4360 (Wasp Major) engine and a two-stage General Electric variable discharge turbosupercharger.

In addition to increasing the output of the 3,500-horsepower R-4360, already the world's most powerful piston-type engine, the VDT has performance characteristics that make it an outstanding power plant development. Its fuel consumption is low at cruising and take-off powers.

The VDT power plant enables heavy, long-range aircraft to fly farther, faster, and higher. Airplanes can take off with heavier loads of cargo, fuel, or bombs, and they can climb faster. Bombers powered with the VDT can go into and away from target areas at high speeds and at altitudes of nearly 8 miles.

The efficiency of the new power plant combination rests primarily in the effective use of the energy in the engine's exhaust gases, heretofore largely wasted, and in the aftercooling of the supercharged combustion air.

The General Electric CHM-2 two-stage turbosupercharger utilizes the engine's hot exhaust gases in two ways. The turbosupercharger first uses their energy to supercharge all combustion air required by the engine. It then discharges the gases to the rear through an orifice, the size of which is varied to obtain the best division of exhaust energy between supercharging and jet thrust. Thus, the energy in the fuel is utilized to deliver power directly to a propeller shaft, to supercharge combustion air, or to create jet thrust.—Department of the Air Force.

Navigational Radar

New and improved radar—the radio pulses that let man "see" through night and fog—will be on some 200 Army vessels when they are turned over to the Navy, the Signal Corps, which procured and installed the equipment, announced recently. At the same time, the Signal Corps announced the virtual completion of the modernizing project.

Under best conditions, the navigational radar will have a maximum range of 40 nautical miles in a straight line. It is sufficiently sensitive to distinguish two objects on the same bearing but differing in range by as much as 50 yards.

Known as the AN/SPN-5, the set's design is based on tests conducted under performance conditions proposed by the United States Coast Guard. The Signal Corps said the set incorporates the latest features and improvements of the art.

A signal reflected from any target that enters the path of the radar beam—such as another vessel, the shore line, a buoy, or a foreign object—is presented on an indicator tube. All targets are presented on the tube (a cathode ray oscilloscope) in their relative position with respect to the vessel. The distance between the vessel and any target is ascertained by electronically calibrated range marker rings on the face of the 'scope.' The end result is an actual picture presentation of the line-of-sight area surrounding the vessel. Operation of the equipment has been simplified as much as possible.

The set operates on a frequency in the 3.2 centimeter band and projects a narrow, horizontal beam of radio energy which results in extremely high definition and bearing accuracy. The maximum calibrated range is 40 nautical miles. However, the maximum usable range is a function of radio propagation factors and in general is limited to line-of-sight distances depending on antenna height and target elevation.—Office, Chief Signal Officer.

FRANCE

Arms Research

The research and experimentation that are being conducted at Vernon, France, under the supervision of the armaments command of the French Army fall into two distinct fields. One group is engaged in the development of internal combustion engines for tanks.

Other teams, however, are working on projects that, it is hoped, will lead to the development of practical guided and self-propelled missiles for antiaircraft defense.

The field of guided missiles had been totally unexplored in France prior to World War II. For this reason, military engineers at Vernon were obliged to assimilate German techniques as quickly as possible before tackling the specific problem assigned to them by the armaments command.

The problem of an effective antiaircraft weapon, a very ticklish one technically, had been undertaken because France was not equipped to compete with the United States and Britain in the field of heavy missiles for strategic use. It was a question of where France could make the most valuable contribution.

In the matter of guiding the missiles, the system now being explored uses a beam ride, the missile being constantly maintained on the rotation axis of a turning electro-magnetic beam directed at the target from the ground.

To attack an ultra-rapid airplane with a maximum chance of success, two principal conditions must be satisfied: the missile must, of course, travel faster than the target, but it must also respond quickly to its system of controls. The more responsive it is, however, the less stable it becomes. For this reason, technicians are experimenting with various types of gyroscope stabilizers, servo motors and empennages in an effort to find the most effective compromise.—*The New York Times.*

INDONESIA

Dutch Evacuation

In December 1948, Dutch forces in Java seized the Indonesian Republican capital, Jogjakarta, and took certain Indonesian leaders into custody. (MILITARY REVIEW, August 1949, p. 77.) On 24 June 1949, the peaceful return of the city to the Republicans began under the eyes of United Nations observers.

The operation was in three stages. On 24 June, Wonosari, in the Jogjakarta Residency, was handed over by the Dutch troops to the Indonesians. On 29 June, Dutch troops left Jogjakarta and Indonesian troops marched in, the 15 military observers of the UN remaining in the town. On 6 July, the Indonesian President and Vice President returned to Jogjakarta from the island of Banka in an aircraft provided by the UN Commission for Indonesia. They were welcomed by the Sultan of Jogjakarta and members of the UN Commission, and were greeted by flagwaving crowds.

Dutch troops, with their arms and baggage, about to leave Jogjakarta in trucks.

The United Nations Commission claimed the occasion as establishing an important precedent in settling international disputes.—*The Illustrated London News.*

CANADA

Joint Committee

The United States and Canada have established a joint industrial mobilization committee to exchange information and coordinate views of the two governments in connection with planning for industrial mobilization in an emergency.

The committee will also cooperate with the United States-Canadian Permanent Joint Board on Defense, which has been in existence since 1940.

It was specified that the joint committee should:

1. Exchange information with a view to the coordination of the plans of the United States and Canada for industrial mobilization.

2. Consider what recommendations in the field of industrial mobilization planning, in areas of common concern, should be made to each government.

3. Be empowered to organize subcommittees from time to time to facilitate the discharge of its functions.

4. Be responsible for cooperation with the Permanent Joint Board on Defense on matters of industrial mobilization.—*The New York Times.*

AUSTRALIA

German Reparations

In the last 3 years, Australia has received many thousands of tons of machinery as reparations from Germany. This included a plastic press, heavy engineering equipment, and large quantities of machine tools. Reparations will eventually total $3,200,000. Australia has also received the benefit of the experience of 46 German scientists and technicians. To become eligible to work in Australia under the reparations scheme, German scientists must be able to offer services not otherwise available, and they must be screened by the Australian Security Service.—*Australian Weekly Review.*

WESTERN EUROPE

Arms Agreement

Defense Ministers of the five Brussels Treaty nations announced recently they had agreed on a unified plan of arms production and service supply.

The Defense Ministers approved a plan of supplementary armament production. They also agreed upon measures to increase the effectiveness of existing forces.

The combined defense plan already calls for standardization of equipment. A spokesman said an interchange of parts between the national forces would soon be possible. Electric power and equipment will soon be the same on all Brussels alliance warships.

Refueling of a French cruiser by a British ship will become possible through standardization of rubber hose and other equipment. Training manuals have been translated into the languages of all participating countries to insure parallel training of soldiers.—*The New York Times.*

SWEDEN

Torpedo Boats

In a few years, the Swedish Navy will have 10 torpedo boats of a new type. The boats will be 3 meters longer than the present type and will mount an additional 40-mm gun aft. Furthermore, the boats will be equipped with radar to assist in navigation and fire direction.

Some of these boats are already under construction at the Kochum Shipyard at Malmo.—*Militaer Orientering,* Norway.

GREECE

Airfield Construction

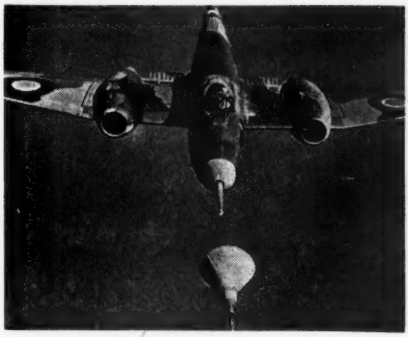
For the past 2 years, American Army engineers have been preparing airfields and landing strips throughout Greece. Recently the work was completed. Nine major airports, and numerous strategically placed airfields and landing strips, all fully equipped, are now ready for use.—*The Royal Air Force Quarterly.*

GREAT BRITAIN

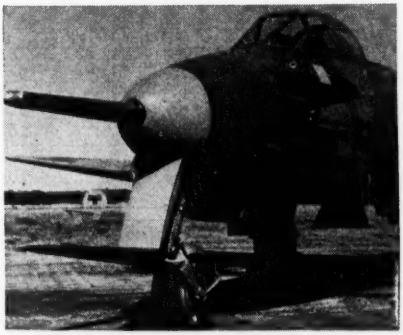
Jet Refueler

On 7 August 1949, a civilian test pilot set an endurance record for jet-powered aircraft by remaining airborne in a Gloster *Meteor* for 12 hours, 3 minutes. The feat was made possible by a new device invented by personnel of Flight Refuelling, Ltd.

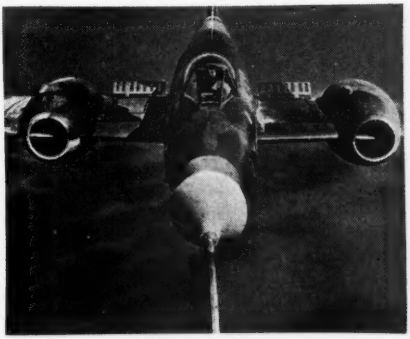
The aircraft took off from Tarrant, Rushton, Dorset, at 0520 and landed again at 1723. During its flight, it was refueled 10 times from a *Lancaster* bomber acting as a tanker, which supplied a total of 2,352 gallons of fuel. The tanker trailed a pipe which ended in a cone, and this was rammed with the pointed nose of the jet aircraft, making a sealed contact. A valve



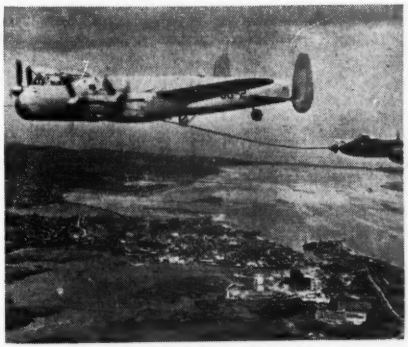
Above, the jet makes contact with the hose trailed from the tanker plane.



Closeup of the refueling probe, mounted on the nose of a jet aircraft.



Above, fuel flowing into the jet's tanks; below, tanker and jet connected for refueling.



was then opened and the fuel poured down the supply pipe. When the tank of the jet aircraft was full, the fuel was automatically cut off. During this operation, the jet aircraft flew at about 200 mph, slightly below the tanker.

During the refueling contacts, the two planes were never linked for more than 9 minutes at a time. Usually, the contact was much shorter. The flight covered 3,000 miles, the distance between London and New York.—*The Illustrated London News* and *The Sphere.*

USSR

Transportation System

The far-eastern Soviet communication system, sparse in rail and automobile transport, is building a network of airlines. Numerous airfields, serving both commercial and military aviation, are now in use. A series of emergency landing fields also have been built. Frequently, the airplane serves areas where no other method of mechanical transportation has ever penetrated.

Regular airlines actually known to exist in the vicinity of the Chinese frontier are as follows:

The Samarkand-Tashkent line toward the Afghan frontier and Andijan Och.

The Alma-Ata and Frunze network toward the Sin Kiang frontier: Karakol and Djarkent, with an extension in Chinese territory toward Kouldja, Wu Su, Dihua.

The Irkutsk lines toward Ust-Kut and Yakoutsk; from Ulan-Ude to Ulan Bator; from Tchita toward Lake Baount; from Roukhlovo toward Nezametnyi and Nijne Stalinsk; from Blagovechtchensk toward the branching of the Ekimohan.

The line connecting Vladivostok, Khabarovsk, Komsomolsk, Nikolaevsk, Okha, and Alexandrovsk, which is supplemented by the coastal line from Vladivostok through Sovietskaya Gavan, Nikolaevsk and Aian, to the Okotsk Sea and Kamchatka.

All of these lines and networks are linked with Moscow either directly or by the route that follows the Trans-Siberian Railway. They are all united in the Far East to the line of the 60th Parallel.

The importance of communications for Russia is clearly indicated by the attention devoted to them by the successive 5-year plans: construction, reconstruction, building double track, increase of traffic, and additional rolling stock.

Sixty-six thousand miles of new highways and 4,200 miles of new railways are to be in use by 1950.—*Revue de Defense Nationale*, France.

Aviation Day

The new Soviet jet planes described by the press as looking as if they had come "from the arsenal of interplanetary flight," were demonstrated on Soviet Aviation Day at Tushino airdrome near Moscow.

The new jets were shown by the Soviet Air Force in an elaborate spectacle that included hundreds of aircraft of all types as well as several hundred parachutists

Russian paratroopers "attacking" an airport.

and a mock battle between a squadron of bombers and jet fighters.

One of the new Soviet jet models flew over the airfield at the conclusion of the show at an extremely low level. This was followed by single flights of speedy jet fighters, also flying at low altitude.

Foreign military attaches, who watched the flight of the new jets, said they seemed to incorporate advanced engineering principles and to indicate progress over the jets displayed in the May Day celebration.—*The New York Times.*

Morale

Digested by the MILITARY REVIEW from an article by Major General A. C. Duff in "The Royal Engineers Journal" (Great Britain) June 1949.

THE introduction of the word "morale" into the British military vocabulary did not take place until World War I and was accompanied by some doubt as to whether it should or should not be spelled with a terminal "e." It displaced the phrase "the spirit of the troops," which now has a very odd and old-fashioned sound.

Much nonsense is still talked about morale, such as, "high morale depends upon good rations and regular mails." A moment's thought will show the absurdity of the statement. On countless occasions, the highest possible morale has been exhibited by troops in far-away outposts, in beleaguered cities, and even in Prisoner of War camps, where rations would barely sustain life and where mails were nonexistent. Indeed, every British officer who has seen active service knows that it is just at those times when conditions are hardest that morale tends to rise. It is at the base and in the rest camp, where material needs are on the whole adequately satisfied, that morale so often slumps.

I would describe morale as a by-product, and I think that the main ingredients which go towards its composition are four in number. They are leadership, discipline, good administration, and *esprit de corps*. Their importance follows that order, with leadership easily first. So to discuss morale means discussing separately each of these four. I do not, however, propose to make any further mention of leadership. It is too big a subject, and most men have a pretty good idea of what leadership means and what are the essential qualities of a leader. I am speaking of leadership, not of generalship, which is one of the specialized forms of the art.

Discipline

Discussion of discipline may well be prefaced by Kipling's lines as follows:

> Body and spirit I surrendered whole
> To harsh Instructors—and received a soul.

This is not a bad summary of the meaning of discipline. Too much is now spoken and written about "modern discipline"—intelligent cooperation, readiness to take responsibility, and individual initiative. These are all good qualities and discipline makes a good foundation for them, but they are not themselves discipline and are no substitute for it. The essential of military discipline still lies, as it did in the days of Alexander's phalanxes and Caesar's legions, in obedience to orders, no matter what the consequences. This is the fundamental lesson which has to be

learned before any body of troops can call itself disciplined.

The average recruit joins the Army with no experience of discipline of this type. The only discipline he has probably encountered is the discipline of the home—often erratic and spasmodic; the discipline of school—designed for boys, not for men; and the discipline of the factory—a matter of money as the inducement, and danger of dismissal as the spur. Once in the Army, he has to adapt himself to a different way of life, governed by sanctions of a different kind. To the Army as a corporate whole, he is called upon to surrender his individuality; the surrender made, his life is wonderfully simplified. He finds himself enfolded in a routine "ancient, effortless, ordered, cycle on cycle set." In the process of instilling obedience as an automatic reaction, the principal agency used is close order drill. Nothing has yet been found to rival its effectiveness in making men feel that they are "members one of another" and the instruments of an authority higher than themselves.

When this fundamental lesson has been ingrained, further progress becomes possible. During the early stages of his training, the young soldier is neither required nor invited to take responsibility for anything except himself. When he has learned to obey orders, there comes the time when he should learn to give orders. In the career of a successful soldier, there are two dramatic moments—moments when he cuts himself adrift and makes a new start in a different life. The later of them is the jump from noncommissioned to commissioned rank; the earlier, and perhaps the more difficult, is the jump from private to lance corporal. This is the moment when he first accepts responsibility for other men as well as for himself, a responsibility which will cling to him and grow ever greater as the years pass. He has to rely on his own character and his own intelligence to carry him through, but he has one powerful aid in the discipline which tells him his place in the scheme of things and lightens the burden on his shoulders.

Discipline is an essential ingredient of morale and its particular contribution is stability. It is possible to imagine a body of troops displaying under some temporary stimulus the superficial signs of good morale, yet going to pieces as soon as the stimulus was removed. This state of affairs is unlikely in a disciplined body.

Administration

Turning to administration, there is, of course, a grain of truth in the "rations and mail" doctrine. Administration includes the provision of the manifold material things which an army requires to enable it not only to live but to fight. If those material things are manifestly inadequate, morale will suffer. For the last 30 years, fortunately, the standard of the administration of the British Army in war has been high, perhaps because the disasters of the Crimea have lain at the back of the minds of the responsible authorities. There have been exceptions to the rule. The campaign in Mesopotamia in 1915 was one, when, in the surrender of Kut and in the fearful loss of life incurred in the vain attempts to relieve it, we paid the price of attempting operations patently beyond the scope of the slender administrative resources available. But the exceptions have been few, and in World War II, I cannot recall a single instance of serious failure. Nor do I believe that administrative failure, when it does occur, is necessarily damaging to morale.

Major administrative policy is a subject exceedingly remote from those most liable to suffer by its mistakes. The kind of administration which is seen by the soldier and open to his criticism is the administration of his own platoon or company—administration so homely and so

prosaic that it is seldom dignified by so stately a name. Is the duty roster fairly kept? Are the rations decently cooked? Does the medical officer take trouble over a man who reports sick? Can the pay sergeant explain why a man's credit is less than he thinks it should be? These are the things that matter to the rank and file. Classify them under administration if you like, or, if you prefer, classify them under the heading of leadership. The two are inseparable at or below the level of a lieutenant colonel's command. A junior officer cannot be a creature aloof, making his appearances only in shining armor to lead his men into battle. He has to be not only their leader in battle but their father and mother at all times. If he is not prepared to do this, and anxious to do this, he is not a good officer.

Esprit de Corps

Given good leadership, good discipline, and good administration, what other factors conduce to high morale? The answer is, I think, that the only other major factor is the subtile and elusive quality known as *esprit de corps*.

Esprit de corps is not the prerogative of the armed forces. It springs up wherever men are united in a corporate effort and share a common loyalty—it no doubt existed among galley slaves—and its influence can be immense. "Not to let the side down" is the keynote. It offers one more inducement to the soldier to strive for a level of achievement higher than he could otherwise attain. The Army realizes this, and our military organization is designed to foster *esprit de corps*. There are plenty of simple and inexpensive ways of doing so: distinction in dress, idiosyncrasies of drill, the teaching of regimental history. The difficult thing to decide is just which component part of the military machine should be selected as the focus on which *esprit de corps* should center: the battalion, the regiment, or the corps. In peacetime, the choice is limited to these three, for the higher formations, such as an army, which in war can generate intense *esprit de corps*, no longer exist. The official answer is in favor of concentrating upon the regiment, but there is room for difference of opinion.

Esprit de corps in wartime is fostered by other and more potent means than stressing the regimental aspect. After World War I, it was generally accepted that the division was the highest formation in which *esprit de corps* could make itself felt, and even there but seldom. World War II contradicted this teaching. Not only did many divisions achieve a high degree of *esprit de corps*, but many army corps did the same, while higher formations still, the Eighth and Fourteenth Armies, made a reputation such that every individual in them was proud to wear their distinctive patches. Why should the lapse of 20 years have brought about this surprising change? I do not think that it can be ascribed to an improvement in leadership. Without strong and colorful leadership, *esprit de corps* cannot be cultivated in so huge a body of troops as an army, but strong and colorful leadership was not lacking between 1914 and 1918. I think rather that the change is due to the more efficient and rapid agencies now at the disposal of a commander seeking to impress his personality on the troops serving under him. Air transport has increased his ubiquity, and the press, radio, and even the phonograph disseminate what he says and what he writes. The great commanders of the past had none of these aids, but then the number of men with whom they were dealing was relatively very small. Whatever the reason for the change, there is no denying the fact.

Esprit de corps, and especially the *esprit de corps* which can grow up in a formation in wartime, can make a substantial contribution to the morale of that

formation. Yet it would be a mistake to forget that it may be detrimental to morale elsewhere. Such a unit, or such a formation, although a lion in battle, may be an uncomfortable neighbor. The lion tends to expect the lion's share of anything there is to be had, and the lion also tends to look down on those whose prowess has not been so convincingly demonstrated as has his own. The process of fostering *esprit de corps* should be conducted without bringing in comparisons, necessarily odious, with others who are outside the charmed circle. The "Loamshires" should learn to pride themselves on their superiority over their country's enemies, not on their superiority over the "Blankshires" next door. The former comparison can only be drawn in wartime, and then on data not easy to verify, while the latter comparison invites itself in every garrison town. Rivalry of that kind can be healthy, but it can also be highly mischievous. It is usually the unit which has fallen below the average that seeks to hide the fact by ostentatious scorn of its neighbors.

Summary

It may be suggested that in listing these four principal ingredients of morale—leadership, discipline, good administration, and *esprit de corps*—I have been guilty of an omission in making no reference to the justice of the cause in which a war is waged. Cromwell declared his preference for "a plain russet-coated captain that knows what he fights for and loves what he knows," but this view has found singularly little support among the great commanders who have succeeded him. Napoleon said expressly that the justice of the cause was a matter of little moment, and his opinion is entitled to respect, for seldom have armies fought more magnificently than his in causes more wholly reprehensible. More recently, Field Marshal Lord Wavell has expressed similar views. This conflict of opinion can be understood when viewed against the background of the circumstances of the time. Napoleon was thinking in terms of war against a foreign enemy, and in a war against a foreign enemy that just cause means to most men the cause of their country. Cromwell was thinking in terms of civil war, and he disregarded love of country because it was common to both sides. Their difference lay only in the rights and wrongs, political and religious, of their respective causes. Love of country may be taken for granted as an element in the morale of British troops, and love of country is a more powerful motive than the consciousness that one's cause is judged by lawyers and divines to be the sounder one. Patriotism has been under a cloud ever since Dr. Johnson remarked unkindly that it was the last refuge of a scoundrel. When we go to war nowadays, we are told that we are fighting for such abstractions as Democracy or the Four Freedoms, but can one Englishman in a thousand say offhand what the Four Freedoms are? By their poetry shall we know them. An "Ode to Democracy" has yet, to the best of my belief, to be written. Patriotism may ultimately give way to some wider loyalty, but not yet, nor for a long time to come.

An army is a fighting weapon moulded by discipline and controlled by leaders; the essence of the army is discipline. Good morale is impossible without good leaders; both are impossible without good discipline.

Field Marshal Montgomery

The French Fifth Armored Division at Colmar

Translated and digested by the MILITARY REVIEW from an article based on documents of the First French Army and appearing in "Revue Historique de L'Armee" (France) No. 3, 1948.

THE French 5th Armored Division was activated in 1943 in Morocco and Oran and placed under the command of General de Vernejoul. It was made up of seasoned troops from the North African Army, escapees from occupied France, and Legionnaires.

The division, consisting of infantry, armor, engineers, and artillery, to which was added Algerian Territorial Forces and signal, train, and various other services, was entirely equipped by the United States Army. It was broken down into tactical groups organized around the armored units. The groups were reinforced by a reconnaissance squadron and, at times, by tank destroyers, in accordance with the American method of creating combat commands. The armored vehicles were M-4 medium tanks and tank destroyers.

In September 1944, the division entered France from the south. It took part in several brief battles in the Vosges mountains and in the offensive of 15 November to 1 January 1945, during which Haute-Alsace was liberated.

German Counteroffensive

In spite of defeats in other sectors of northeastern France, the Germans clung tenaciously to the Colmar pocket. In so doing, they were able to threaten the Allies with counterattacks. Since the November defeat, the *Wehrmacht* had been able to recover slightly, and it resumed offensive operations at the end of December. Marshal von Rundstedt broke through the American lines in the Ardennes. Although this maneuver was quickly stopped, the offensive spirit of the Germans remained. The US VI Corps was threatened between Bitche and Haguenau, and the Allied command believed that it would be necessary to fall back to the line of the Vosges after evacuating Strassbourg.

Hitler had promised Strassbourg to his country as a New Year's gift, and in order to prove his intentions had sent Himmler, the most faithful of his followers, to that area.

Strassbourg, the heart of Alsace, was not lost. After the victory of early January, the Allied forces then could turn to the Colmar pocket. Reduction of the pocket was equivalent to the expulsion of the Germans from France and the liberation of Alsace.

The Germans employed strong forces in this area. The excellent forces already in the pocket were joined by an elite unit, the 2nd Mountain Division, which had been moved in from Norway.

The terrain held by the Germans was broken up by numerous forests which provided good shelter. The Germans were familiar with this special type of warfare which permitted the use of excellent antitank weapons such as the *Panzerschreck* and *Panzerfaust*. Moreover, the thaw which began on 30 January was favorable to the enemy. Roads became quagmires and even open terrain was transformed into marshes. Mines troubled the Allied forces more than ever and tanks bogged down in the mud. Also, there were natural obstacles such as the Fecht, Ill, and Blind Rivers and the Colmar Canal. The initial crossings over the Fecht were at Guemar and Ostheim.

German Strategic Position

The German bridgehead at Brisach was defended by a powerful force of antiaircraft artillery consisting of 140 light and heavy guns, all of which were capable of being used for ground fire. The Germans also held the Kaiserstuhl observation

point and the rocky promontory of Neuf-Brisach.

As for the German armor, it clearly outclassed that of the Allies. The heavily armored self-propelled guns delivered effective fire at ranges up to 2,200 yards. Moreover, the wide tracks of the German vehicles increased their maneuverability. General de Vernejoul stated that Allied tanks could be pierced at 2,200 yards by the German 88s. The Allied tank destroyers, on the other hand, could not destroy German tanks at distances over 880 yards. Even at these short distances, several hits were required. Allied tanks were almost powerless against the thick armor of the Germans, but the Allied crews still achieved victory.

Plan of Attack

About the middle of January, the Allied High Command decided to launch a powerful offensive against Brisach to cut off the last German bridgehead in Alsace. The First French Army was directed to carry out this mission.

The plan was to take the form of a pincers which would close on Colmar from the north and the south. The southern thrust would be made by the I Corps, commanded by General Bethouard. Its mission would be to crush all resistance between the Vosges and Mulhouse, from Cernay to Ensisheim, after which it was to move up in the direction of Brisach and seize possession of Chalampe. Meanwhile, I Corps was to effect a junction with II Corps. The latter, on the north under the command of General de Monsabert, was to attack between Colmar and Illwald. II Corps was to break through the German front, attack toward the Colmar Canal and the Rhone-to-Rhine Canal, and then join the forces under General Bethouard at Brisach.

The hinge of these pincers was to be the 28th American Infantry Division and the 16th French Infantry Division, which were to pin the Germans down in the Vosges or to pursue them closely in case they retreated.

Once the two army corps had met, Colmar would then fall, if it had not already done so.

The attacking units of the II Corps were the 1st Infantry Division, reinforced by elements from the 2nd Armored Division, and the 3rd American Infantry Division, which had Combat Command 4 from the 5th Armored Division attached. These two large units were to break through the German front and create an initial bridgehead on the Ill River. The 5th Armored Division (Combat Commands 5 and 6) was to be in reserve until a crossing was provided over which it could attack toward Neuf-Brisach.

The distance which II Corps had to cover in order to reach its objective was the shortest, only about 12 miles in a direct line. Its forces could be moved into position under cover of the Vosges slopes, without being observed. The 1st French Infantry Division and the 3rd American Infantry Division were ordered to seize the bridgehead on the Ill and to continue on through Illhausern and Maison-Rouge as quickly as possible. At the same time, they were to push ahead over the axis from Jebsheim to Durrenentzen, seizing possession of the bridges across the Colmar and Rhone-to-Rhine Canals between Wickerschwihr exclusive and Artzenheim exclusive.

In the third phase of the II Corps maneuver, which was to begin when the opportunity presented itself, the 5th Armored Division was to advance on both sides of the canal with all the means at its disposal toward Neuf-Brisach and the Rhine bridges. The Corps was to hold the Biesheim area, Neuf-Brisach, Wickolsheim, Algosheim, and the Rhine bridges. It was to be ready to assist I Corps on the Neuf-Brisach-Chalampe and Neuf-Brisach-Ensisheim axes.

This was the mission given by General

de Monsabert to the 5th Armored Division. General de Vernejoul had the 5th and 6th Combat Commands to carry out the order, plus the 1st Regiment of Parachute *Chasseurs* and Shock Groupment No. 1—two veteran units.

However, the events which followed forced the command to modify the mission as information was received. The tenacity of the German resistance in the Illhausern woods is an example of the circumstances which led to modification of the mission.

The Attack

The attack of the II Corps was begun at 2130 on 22 January 1945 by the US 3rd Division, north of Guemar, and, on the 23rd at 0730, by the 1st French Infantry Division in the Illhausern area. Between 23 January and 5 February, the Allies delivered three successive blows against the German forces:

1. A 4-day breakthrough phase from 23 to 26 January.

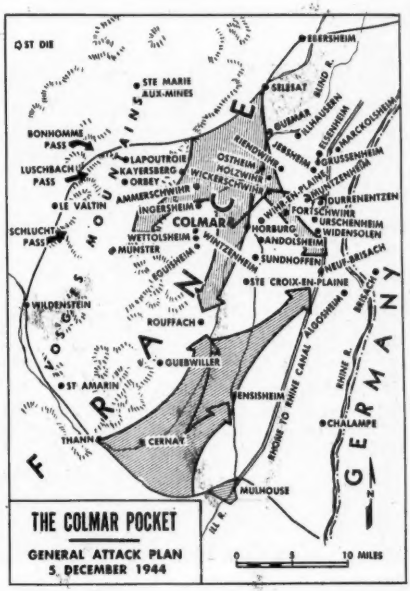
2. The hand-to-hand fighting at Jebsheim (27th to 29th), at which time the Colmar Canal was crossed.

3. The exploitation (30 January to 5 February), which resulted in the closing of the pincers, the fall of Colmar, and the junction of the two corps.

By the end of 23 January, the 3rd US Division had mopped up the Colmar forest and reached the village of Ostheim. It also forced a passage of the Ill River when Maison-Rouge was taken. Farther north, the 1st Infantry Division penetrated into the Illhausern plain. The German Army had been completely surprised.

The advance was resumed the following day, but it was slower and more difficult. The Germans, aided by the effective fire of self-propelled guns, counterattacked repeatedly. They had discovered a vulnerable situation on the left flank of the Allied offensive, and Allied progress was not as great as had been expected. An attack southeast from Illhausern continued to be impracticable.

The Allied threat became accurately defined on 25 January. The *Wehrmacht* clung tenaciously to its positions, with no thought of defeat. A small salient was formed between the 3rd US Division and the 1st Infantry Division. A slow advance toward the southeast was begun, but, on the east, the troops were unable to make any progress before the Elsenheim woods. Obviously, the Germans desired to remain in



Jebsheim. They hoped to drive the Allies back to the Ill River. It was necessary that the Allied advance be continued.

At this time, Combat Command 4, which was with the 3rd US Division, and Combat Command 6, were thrown into the battle. The first took position in the Riedwirth woods area, insuring the defense of Maison-Rouge. The second passed through the Colmar forest and split into three columns, the one on the northeast moved toward Illhausern, established contact with the 1st

Division and operated along the edges of the Elsenheim woods. The central column headed east in order to cover the flank of the attack. The third column, after having reconnoitered a passage across the Riedbrunnen, crossed this stream and seized the Jebsheim mill. This was an important victory in that the bridges across the Blind River were captured intact.

The Allied forces had hardly consolidated their gains before they had to face another powerful counterattack. Nightfall found the Germans halted. Two companies of parachute forces, deployed beyond the mill, provided cover for the new positions.

The next morning, while Combat Command 6 was reorganizing, the 3rd US Division and Combat Command 4 halted a German counterattack against Schmalholz. The Allies entered Riendwihr in the evening.

Thus, after 4 days of fighting, the Allied troops had broken through the German lines and held a bridgehead on the Ill River about 4 miles wide and 1½ miles deep. But the Germans still held Jebsheim.

The 3rd US Division continued its attack toward the Colmar Canal. Combat Command 4 took Wickerschwihr on the bank of the canal and penetrated Holzwihr from the south. Farther to the west, it took the Ladhof Inn from the Germans. Caught between the French and the American Division coming from the north, Holzwihr fell.

Almost without pausing, elements of Combat Command 4 pushed on toward Wihr-en-Plaine, but were forced to stop within about 600 yards of this objective. Nevertheless, the tanks had the bridge under fire.

Colmar, France, which fell intact to US and French troops on 2 February 1945, after bitter fighting to reduce the German pocket in that area.—US Army photo.

At the same time (27 January), Combat Command 6 advanced over the axis from Jebsheim to Durrenentzen, covering the flank of the American division. At 0800, the latter entered Jebsheim, as did Combat Command 6 an hour later.

The German defense was shaken but it stubbornly defended the town, foot by foot.

Above, French troops and a tank penetrate the streets of Colmar, France, on 2 February 1945, the day the city fell to US and French forces. After the fall of Colmar, fighting continued to the east; below, the Vogelsheim area near Neuf-Brisach, as seen from a 3rd US Division aerial OP on 14 February 1945.—US Army photos.

By nightfall, the situation was still confused, and Jebsheim had not yet been entirely cleared.

The next day, Combat Command 6 and the 1st Parachute Regiment continued the fight. Although the Germans still held the southern portion of the village, they had lost 117 prisoners and more than 200 dead.

It was imperative that the battle be brought to an end. The US XXI Corps took charge of operations. It consisted of the 5th Armored Division and the 3rd, 28th, and 75th US Infantry Divisions.

The Germans reinforced their forces with fresh battalions from their mountain division and ordered that the village and the mill be retaken.

Grussenheim, north of the battle, had just been taken by the 2nd Armored Division. Combat Command 5 installed itself there and held the town against heavy counterattack. Both the Americans and French continued the bitter fighting in Jebsheim.

Finally, the 7th Company of the "Remele" Regiment, 5th Division, cleaned up the western and southern sectors of the town while the Americans took charge of the eastern part. In the end, all available armored vehicles were lined up and their fire was concentrated on the last centers of resistance. The final attack started at 1620 and lasted only 20 minutes. Three hundred Germans were taken prisoner and 500 killed.

Although the Germans lost nearly 2,000 men altogether in the battle of Jebsheim (including 900 prisoners), Allied losses were equally severe.

Final Phase

After this battle, the advance against Neuf-Brisach and the liberation of Colmar became possible. The last phase of the battle was begun on 30 January. Three days were required to assemble the forces south of the Colmar Canal and to push ahead in the direction of Brisach. At the end of these 3 days, the outcome of the battle had been virtually decided.

Combat Command 4 crossed the canal, installed itself at Fortschwihr, and took the Nieder forest. Horburg surrendered on 31 January. The following day, after having seized Andolsheim and reaching Sundhoffen, the Combat Command outflanked Colmar on the east.

Combat Command 6 set out from Jebsheim, moving eastward. Hampered by the bad weather and roads, the attack did not succeed. The German reaction was determined. Legionnaires and parachute troops attacked furiously as shock troops and losses were heavy. The commander of the assault company was killed, his platoon leaders wounded, and 52 men became casualties. The remnants of this unit rallied around a first sergeant and fell back on Jebsheim.

In the Durrenentzen area, Combat Command 5 attacked Urschenheim. German resistance broke there and the forces surrendered.

Muntzenheim, Urschenheim, and Durrenentzen also fell. The latter was attacked on 31 January and fell at 0500 on 1 February. That evening, Widensolen fell to Combat Command 5, which pushed on to within about a mile of Neuf-Brisach.

Thus, on 1 February, the First Army followed the eastern bank of the Ill to the vicinity of Sundhoffen.

The last attack on Colmar began on the 2d. The XXI US Corps attacked on two north-south axes: Ostheim to Colmar, and Ammerschwihr to Ingersheim. The Corps reached the northern edge of the city and opened a passage for the 5th Armored Division. In a fine gesture, the American command gave the French unit the honor of liberating Colmar. Combat Command 4 attacked the objective. Combat Command 6, which had been badly depleted, remained at Jebsheim, and Combat Command 5 attacked Neuf-Brisach.

The plan was entirely developed during the night, after the fighting had been shifted toward the Colmar woods in order to cross the Ill at Maison-Rouge. The commander, resisting the temptation to attack the city directly from Andolsheim, decided to execute a lateral shift and attack the city from the north. In this way, the force could avoid natural obstacles and profit by the openings produced by the double American attack.

Colmar fell on 2 February 1945. The assault began at 0700. At 1030, a battalion discovered a zig-zag trench, entered it, and came out in Rapp square. Back of this unit, another battalion mopped up the whole northeastern part of the city in heavy fighting. At 1230, the first group reached *la cite des Vosges*, while subgroupment A, which had followed the second battalion, passed through the city and, at 1630, occupied the village of Wintzenheim. By the end of the day, Wettolsheim and Eguisheim were in the hands of the assault troops.

Colmar had been liberated intact, as were Belfort, Mulhouse, and Strassbourg.

Three days later, the Franco-American victory was achieved at Soulzmatt, where the junction was made with the first elements of the 4th Morocco Mountain Division coming from the south.

The total number of prisoners captured by the 5th Armored Division between 23 January and 5 February was 2,435 officers and men.

Genocide—A New Crime?

Digested by the MILITARY REVIEW from an article by Lieutenant Colonel John D. Hutchins in the "Canadian Army Journal" (Canada) January 1949.

THE Convention on the Prevention and Punishment of the Crime of Genocide, drafted in its final form by committee and adopted unanimously in December 1948 by the United Nations Assembly at Paris, is a portentous document. Its terms are well on the way to becoming not only law as between nations in respect to this "new" crime, genocide, but an integral part of the written national law of the majority of existing states as well.

This Convention, or Treaty, is one from which great consequences may flow, affecting every citizen in the world. There are also implications, which will flow from implementation, in which military men might well take special interest. We have only to recall the history-making war crimes trials which followed World War II (in which more than 50 military men were tried, convicted, and sentenced) to realize that henceforth the methods of conducting wars will be scrutinized and judged by the strictest standards. War crimes, including genocide, will be punishable, whether committed by principals or accomplices, whether these are private individuals, public officers (including military), or statesmen.

Definition of Genocide

It is essential that we should have a definition of genocide. What does the word mean, and what related acts or crimes are equally punishable under this new Convention?

Genocide means any of the following acts committed with intent to destroy, in whole or in part, a national, ethnical, religious, or racial group, as such:

1. Killing members of the group.

2. Causing serious bodily or mental harm to members of the group.

3. Deliberately inflicting on the group

conditions of life calculated to bring about its physical destruction in whole or in part.

4. Imposing measures intended to prevent births within the group.

5. Forcibly transferring children of the group to another group.

Punishable equally with genocide are the following related acts:

1. Conspiracy to commit genocide.

2. Direct and public incitement to genocide.

3. Attempts to commit genocide.

4. Complicity in genocide.

Stated in less legalistic style, genocide is the denial of the right of existence of entire human groups in the same sense that homicide is a denial of the right to live of individual human beings. It emerges clearly from the definition set out in the previous paragraph that genocide is a composite of different acts of persecution and destruction.

The prevention and punishment of genocide concerns us in peace as well as in war. In peace, the safeguarding of minorities is a prime aim of the Genocide Code. The stamping out of this crime in peace will be facilitated and brought nearer realization when its repression is based upon the written criminal law of individual states. In time of war, genocide is effected by a planned and concerted assault on different aspects of the life of captive peoples. To date, we have been unsuccessful in efforts to control or prevent the crime in war.

The Brain Child of Lemkin

The word genocide is the brain child of the noted jurist, Raphael Lemkin, who coined it to denote an old practice in its modern development. The word is derived from the Greek *genos*, meaning race or tribe, and the Latin *cide*, meaning killing. Another word conveying much the same idea, having the same sort of derivation, is ethnocide. Genocide does not necessarily mean the immediate destruction of a nation, although the term would certainly apply in the case of a mass killing of the whole or part of a national population. The word is intended to signify a coordinated plan of various actions designed to destroy the essential foundations of the life of national groups, the ultimate aim being annihilation.

Genocide has as its objectives the disintegration of the political, social, cultural, religious, and economic institutions of national groups, as well as the denial of personal security, liberty, dignity, health, and even life, of the individuals of such groups. Genocide has two main phases:

1. The destruction of the national pattern of the oppressed groups; and

2. The imposition of the national pattern of the oppressor.

This imposition may be made upon:

1. The oppressed population which is allowed to remain; or

2. Upon the territory alone after removal of the population and colonization by the oppressor's own nationals.

The Germans developed an elaborate system of genocide techniques never formerly achieved by any state. These techniques were extended to, and practiced in, widely divergent fields by the Germans. The most important of these were:

1. Political—Local self government was destroyed and the German administrative system substituted. All reminders of the former national character were obliterated and national unity was disrupted.

2. Social—In this sphere, disruption of the former national structure was achieved in part by the abolition of local laws and courts, and the imposition of German as the official language.

3. Cultural—The captive population was forbidden to use its own language in schools or in print (Luxembourg 1940); rigid control was exercised over all cultural activities through licensing.

4. Economic—The foundations of economic existence were destroyed (Jews

were denied the means of existence); participation in business was made dependent upon collaboration.

5. Biological—Depopulation through a variety of birth-rate controls was carried out.

6. Physical—Annihilation of national, racial, and religious groups was carried out, mainly by mass killings, discrimination in feeding, and deprivation of essential clothing, fuel, and medicines.

7. Religious—Religious influence was vigorously attacked, among other means, by pillaging church property and persecution of the clergy.

8. Moral—An atmosphere of moral debasement was encouraged, directing mental energy from moral to immoral thinking. Pornographic publications and movies were made available to the exclusion of all others; gambling and the excessive consumption of strong liquors were encouraged.

Genocide in Ancient Times

The reader will by now have remarked to himself that genocide is in fact not a new crime. He will be quite correct in a sense, although, as already stated, the term is of recent origin and is supposed to denote the modern development of an ancient, if hardly a venerable, practice. Histories of the past contain many accounts of wars of savage butchery and extermination. The actions of the Assyrians in the destruction of Damascus, 732 B.C.; Samaris, 722 B.C.; Babylon, 689 B.C.; and Sidon, 677 B.C., when entire communities were destroyed and whole populations either killed or taken captive, may rightly be considered notable examples of genocide. The terrible deeds of Tamerlane, between the years 1383 and 1400 A.D., bear the stamp of genocide, as do the massacres of Genghis Khan. Could there be a better known case of total destruction, for instance, than that of Carthage in 146 B.C.? The preamble to the UN Convention outlawing genocide takes account of the antiquity of man's genocidal tendencies. It contains a statement that the contracting parties recognize that in all periods of history genocide has inflicted great losses upon humanity and that liberation from the odious scourge requires international cooperation.

The Rousseau-Portalis Doctrine (implicit in the Hague Regulations), that war is directed against sovereigns and armies and not against subjects and civilians, has been disregarded by belligerents since wars began. The horrible examples of the flagrant flouting of this principle seen in World War II are, unfortunately, or should we say fortunately, fresh within the memory of each of us. Genocide is the antithesis of the rule that war is conducted against states and armies and not against populations.

It would seem that in this age of "total" wars the commission of the crime of genocide by major participants will for the future be well-nigh unavoidable. The modern concept of total war conceives of civilian population centers, and base industries of all types, warlike and otherwise, as being strategic targets of prime importance—scarcely less important than military establishments. Genocide is an aberration which threatens to become the norm unless we, the peoples of the world, enact and enforce a rule which outlaws it. The new Convention is but the commencement of this task.

To wage a major total war in this atomic era, certainly an aggressive total war, is, so it would seem, to be automatically guilty of genocide, and thus to be punishable under international law. Will the realization of this fact, coupled with the memory of the post-World War II war crimes trials, and their implications for the future, help to deter the would-be modern aggressor? It is the fervent belief and hope of the framers of the Genocide

Convention that these considerations will in fact deter aggressors.

Much Remains to be Done

To give real effect to the Genocide Convention, much remains to be done. The requirements which must be met may be divided into two categories, namely, those which are immediate, and those which may be termed secondary, though these latter are scarcely less important than those in the first category. Insofar as Canada is concerned, the immediate requirement is the enactment by the Dominion Parliament of legislation having the dual purposes of, first, ratifying the Convention Outlawing Genocide, and, second, incorporating the terms of the Convention into our Canadian Criminal Code.

It is anticipated that two separate and distinct Acts of Parliament may be adopted to achieve these purposes. In any event, the act of ratification implies the intention to effect the indicated changes in our Criminal Code. Ratification without subsequent or simultaneous amendment to the Criminal Code would, in fact, amount to a nullity, since implementation of the Convention can only come about after the completion of both operations. For the future, the main requirement is a system of international controls, operating in conjunction with an international court of justice having criminal jurisdiction and enforcing what amounts to a written international Criminal Code.

It must be our avowed aim to prevent genocide during future wars involving occupation. This will necessitate the prior setting up of a controlling organization or agency (or the use of an existing one such as the United Nations) vested with the power to visit, inspect, and inquire into the methods of treating the captive population. At present, we have no means of determining the plight of peoples under occupation or of alleviating their sufferings. Liberation is the only effectual treatment, and, as we well know, this event all too often comes too late for remedies to be possible. Neither liberation nor reparation can restore an already forfeited life.

It has been said that the Charter of the International Military Tribunal set up by the London Agreement of 8 August 1915 created no new law, that the Charter was merely declaratory of existing law. The same could be said, quite reasonably, of the UN Convention Outlawing Genocide, namely, that the United Nations have merely codified what already is accepted as the international law on barbarity. It is none the less a step forward for the rule of law that these provisions should be formally agreed upon within the community of states and set down with complete clarity for the benefit of all men. These provisions may now serve as a warning in specific terms to any would-be transgressors.

The paramount want in our day is world law. When, but not before, we have made up our minds to making world law, we may hopefully expect to achieve world government.

The United Nations is working toward the establishment of world law, toward the development of a world economy, toward the removal of such causes of war as poverty, ill health, economic hatreds, and toward the improvement and perfecting of its own machinery for the substitution of sanctions for peace other than force.

Ambassador Warren R. Austin

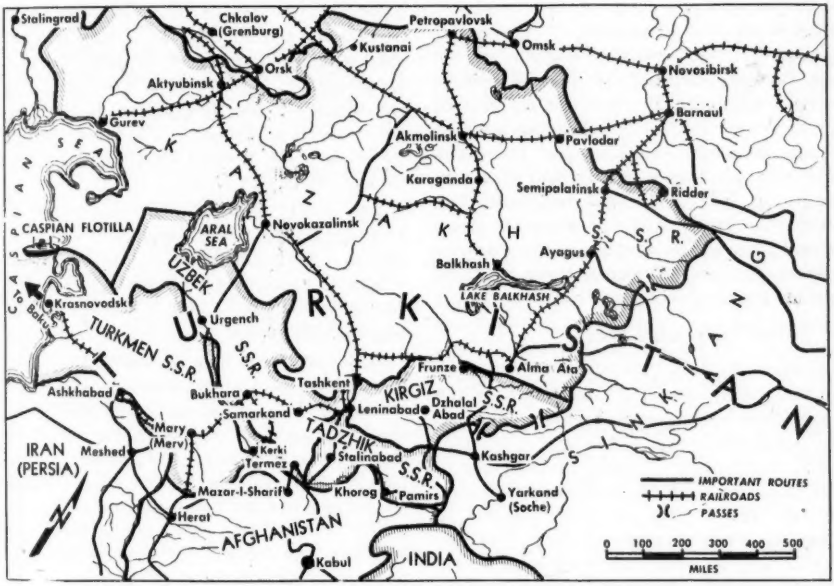
The Russian Threat to the Indies

Digested by the MILITARY REVIEW from an article by Captain D. N. P. Brunicardi in "The Irish Defence Journal" (Ireland) May 1949.

THE Russian threat to the Indies is an old story, dating from the tsar's occupation of Turkestan in the 1860s, and the building of a strategic railway eastward from the Caspian through the cottonlands on the Persian and Afghan borders. It provided British India with an exercise of arms, diplomacy, and the Secret Service for more than 50 years. It is now one of the crucial problems of the postwar "succession states" and the older states and dependencies in Indo-China and Indonesia. The threat now is no longer merely one of possible invasion but has taken on a new menace in the shape of economic disruption and political upheaval characteristic of the "cold war" in any part of the world. It has been extended by the approach of a communist China from the east.

In South Asia is a group of old lands with new governments. Three of them are dominions of the British Commonwealth—Pakistan, India, and Ceylon. The others include the British Colony of Malaya, newly independent Burma, and the old kingdom of Siam, French Indo-China, and, to the south, the Dutch and British East Indies.

From all of these, from time to time since the conclusion of World War II, have come accounts of disturbance, subversive activity, and civil war with which, in every case, the name of communism has been associated. Even if the Moscow govern-



ment be not positively identified with these interferences with peace in Asia, at least, from what we know of its foreign policy, it cannot fail to be agreeably interested.

From late reports, it would appear that the offensive has failed—notably in India, Malaya, and Siam. It never amounted even to a threat in Pakistan and Ceylon. In Burma, however, the situation is still critical. This failure may be attributed to strong action and alertness on the part of the governments concerned, combined with a natural reluctance of the native peoples arising from the religious outlook and pastoral habits of the East. A feature of the struggle has been the activity of Chinese among the disturbers, at least in Siam, Malaya, Indo-China and Indonesia. The struggle began earlier and still continues in Indo-China and Indonesia, two territories in which the presence of strong armed forces of a western power provides rebellious elements with a lever in using nationalism to further their ends.

Russian Forces

While all these "front line" activities of the communist effort to dominate the East have been going on, there lurks in the background the Red Army of Central Asia. Successors to Tamerlane's legions in the fabulous East, Timoshenko's divisions stretch in a long crescent from the Caspian to the Dzungarian Gate, flanking Persia and Afghanistan with a strategic railway and probing the passes of the Himalayas.

Though largely desert and dry steppe or veldt, Russian Central Asia possesses a center of population, economy, and culture in the fertile irrigated lands around Tashkent, the eighth largest city of the Union with a poulation of 585,000. Tashkent is the headquarters of Timoshenko's Army Group, estimated at 30 divisions, each of about 10,000 men. This Group, like the Far East Group, is self-supporting with its own industrial installations. It is capable of fighting without logistic support from Moscow. The 30 divisions probably include 5 armored, 10 infantry (partly mechanized), 4 cavalry (horse and mechanized), and 4 artillery, with 7 air force and airborne divisions. Of the Soviet Navy, operations might involve the Caspian Flotilla in support.

These forces are situated in the most strategically secluded region of Russia with every sort of terrain available for practice and maneuver, including vast deserts for the secret trial of artillery and guided missiles or atomic projectiles. This accumulation of forces gives continued significance to the revelations, in the captured German Foreign Office records, of Soviet territorial aspirations in the direction of the Indian Ocean.

The Soviet Central Asia Army Group protects Russia's most important Siberian center of industry, the Ural-Kuzbass combine, and what has been called the "armaments quadrangle," Baku-Turinsk-Stalinsk-Stalinabad.

In the event of war, examination of the topography of the surrounding countries will show that an advance east into China would be feasible. However, any move to the south towards the Indian Ocean and the Persian Gulf would be over rugged mountains, range after range, and through passes and defiles which could easily be held by small forces. It would be through territory deficient in food and other resources and almost entirely devoid of railways and any sort of good road, hardly passable even for combined ground-air forces. In addition, the limited administrative and supply elements of a modern Russian division, though making for mobility, would be a severe handicap to a southward move through the "bad lands" of Afghanistan and Persia. Nevertheless, both tsar and dictator have pushed their own communications, rail, road, and air, to the very frontier at many points, even across arid desert and high into the

mountains. Widely separated customs houses at Kushka, Kerki, and Termez mark the only roads into Afghanistan, which has no railways. The Afghan roads permit only tortuous and difficult contact with India.

Racial Policy

In any invasion to the south, the opposition of the native tribes would be an important adverse factor which it would be highly desirable to eliminate. An attempt at penetration was made since the war in the Azerbaijan dispute, but it was abandoned. Any further advance into these territories would require careful "conditioning" and the absence of Western forces.

Mohammedanism may have something to do with the problem from the Russian point of view. It is significant that in the "Godless" state, where Islam claims more adherents than in any other country, the religion of the prophet has not been abolished or persecuted. Indeed, it was in the dealings of the early revolution with the Mohammedan peoples of Central Asia that the early discounting of nationality was abandoned. To counteract the influence of Enver Pasha in this area and to carry on the fight against the Basmachi, which was not concluded until the trials of 1936-1938, nationality and race were given recognition and made the basis of territorial divisions.

Stalin, himself a member of one of the Russian "nationalities," is officially regarded as the originator of the theory called "ethnic democracy" applied in governing non-Russians, at least in Asiatic countries. In 1920, in reference to this region, Stalin formulated the policy as follows: "In order to put an end to the estrangement of the border regions . . . it is necessary that all Soviet organs, the courts, the administration, the economic bodies, the direct organs of government—as also the organs of the party—should as far as possible be recruited from among local people acquainted with the customs, life, habits, and language of the native population. . . . Only in this way can the Soviet government become dear to the toiling masses of the border regions."

In 1921, Stalin said: "The fact of the matter is that a number of peoples, mainly Turkic peoples—about 30 million in all—have not passed, have not had time to pass, through the period of industrial capitalism. . . . As a result, they will have to pass from primitive forms of economy to the stage of Soviet economy without passing through the stage of industrial capitalism."

These ideas have been noticeably developed in the communist activities in China, which has already been discussed as being the proving-ground for methods of dealing with Eastern peoples. The events in Southeast Asia during 1948 reveal an effort to make up in successes in the Indies for failures in Western Europe, Greece, Italy, France, and Berlin, and for the defection of Yugoslavia.

Democracy can withstand ideological attacks if democracy will provide earnestly and liberally for the welfare of its people. To defend democracy against attack, men must value freedom. And to value freedom they must benefit by it in happier and more secure lives.

General Omar N. Bradley

Implications of the Atlantic Treaty

Digested by the MILITARY REVIEW from an article by J. M. Spaight, in the "Journal of the Royal United Service Institution" (Great Britain) May 1949.

SINCE war may come as a bolt from the blue, it is obviously of importance that the armed assistance which a pact of reciprocal defense provides should be certain, unfailing, and swift to materialize. There cannot otherwise be any real sense of security among the parties to the pact. It is unfortunately the truth that a pact to which the United States is party—and the United States *must* be party to any pact designed to check possible Russian aggression—cannot be free from some qualification of the undertaking in this respect. It cannot provide for "automatic" military aid from the United States in the emergencies contemplated.

The reason is inherent in the American Constitution. The Founding Fathers must bear the blame for the difficulty, if blame there be. Under the Constitution, three separate authorities are concerned in the matter in question—the President, the Senate, and the House of Representatives. Article II of the Constitution empowers the President to make treaties with the concurrence of the Senate, a two-thirds majority of the Senators present being required for this purpose. If the treaty so made is one relating to defense, it may entail upon the United States the obligation at some future time to go to war, but that obligation has to be so expressed in the treaty that it does not amount to an unqualified commitment. Here the third authority comes in—Congress, which, under Article I of the Constitution, has sole power to declare war. Congress is, moreover, the body charged with raising and supporting armies and providing and maintaining a navy.

There is thus, in the United States, a division of powers which, because it results from specific provisions in the organic law of the state, is more rigid and more embarrassing than the separation of functions in a country like Great Britain. We have in this country no written constitution, but we have a definite constitutional practice. The executive government is the competent authority both to make treaties and to make war.

It is true that the concurrence of Parliament is necessary, insomuch as the government depends on the support of the House of Commons for its existence: it would not be free to adopt a policy to which that assembly was known to be opposed. It has also to look to Parliament for the enactment of legislation necessary to provide for a situation of national emergency, and to vote the money required for the mobilization and maintenance of armed forces.

There is thus a check upon the executive's freedom of action, but there is no such procedural and formalistic separation of powers as there is in the United States. The fact that in the United States cabinet members are not, and cannot be, members of the Senate or House of Representatives, while in Britain they are, and must normally be members of the legislature, goes some way to account for the difference in the constitutional position in the two countries.

It will be seen that in the United States the Constitution makes it impossible for a treaty of defense to contain an unqualified undertaking to enforce the terms of the treaty by going to war. Only Congress can declare war, and Congress does not make the treaty; the Senate concurs in it, but it cannot bind the House of Representatives.

There is here a real difficulty which could be overcome only if the Constitution were to be amended. The ill effects of the difficulty can be minimized in some

measure, however, by executive action. It would be possible, for instance, and not open to constitutional objection, for the executive to make all such preparations for possible military action in conjunction with other states' forces as might become necessary if and when Congress decided to declare war. It could make arrangements with the other parties to the defense pact for continuing consultation and liaison, standardization of training methods and of equipment, planning of possible operations, and generally for the swift and easy passage from a state of peace to one of war.

Many such matters are already dealt with on a cooperative basis by the American states under the Rio Treaty. Much can be done in this way to enable the Allied military machine to get into gear the moment it is started. But, so far as the United States is concerned, only Congress can give the word to start it, and Congress' approval cannot be taken for granted. That is the price which other nations have to pay for the tremendous boon of American military aid in their hour of need. It is a price well worth the paying.

Similarity to the Rio Pact

It was considered worth paying by the states of the Western Hemisphere when they agreed to the Treaty of Reciprocal Assistance signed at Rio de Janeiro on 2 September 1947. Under that Treaty, military aid is not automatic. Article 3 provides that an armed attack upon any party to the Treaty shall be considered as an attack upon all the American States and that each of them shall assist in meeting the attack. But how it shall be met is a matter for each State's own decision.

Further, Article 20 of the Treaty specifically provides that no state shall be required to use armed force without its consent. This reservation was all the more necessary because, under the Treaty, the obligation to enforce against an aggressor the sanctions for which it provides arises when the "Organ of Consultation" (the Foreign Ministers of the American Republics) decides—by a two-thirds majority—that they are to be put into force. The reservation in Article 20 excepts the ultimate sanction—the use of armed force against the aggressor—from this rule and in so doing safeguards the constitutional right of Congress to declare war.

There is no corresponding reservation in the Brussels Treaty of 17 March 1948. In that Treaty, the five participating states give an unqualified undertaking to render to any of their number who becomes the victim of armed attack in Europe "all the military and other aid and assistance in their power." The obligation to come to the victim's aid in arms is thus automatic, but—as in all normal treaties of defensive alliance—it rests with each party to decide whether the circumstances envisaged in the Treaty have in fact arisen. There is in the Brussels Treaty no provision for a majority decision as there is in the Rio Treaty.

In the discussions which took place in Washington in February 1949 between the representatives of the five Brussels Powers (and of Norway for a time) and the State Department, and then between that Department and Congressional leaders, the main point at issue was understood to be whether the proposed Pact should conform to the Brussels or the Rio model. It soon became clear that the American view favored the latter alternative—as was, indeed, to be expected. Senator Vandenberg stated in the Senate on 14 February that the new treaty would regard an armed attack on one party as an attack on all, but would reserve to each Power the right to decide upon the action to meet such an attack. Senator Connally—chairman of the Foreign Relations Committee—added bluntly that that Committee "would never approve or adopt any language in a treaty

that the United States would go to war when one nation in Europe was attacked."

This statement was a shock to those who had had visions of the United States going forth to do battle on behalf of a Europe threatened by the powers of darkness. America, it was said, was giving up her role as the "hound of heaven," was running out of the Atlantic "pack." Actually, she was doing nothing of the sort. She was only doing what she was bound to do under her Constitution. She could not promise automatic military aid in a treaty, and it was mere honesty to say so. There was no ground for jumping to the conclusion that such aid would not be given, provided the constitutional procedure was observed.

Terms of the Treaty

When the terms of the draft Treaty were published on 18 March, it was seen that the United States was not "running out." The terms were reminiscent of both the Rio and the Brussels Treaties. Like them, the new Treaty was expressed to be an arrangement for collective self defense as recognized by Article 51 of the Charter of the United Nations. Like them, again, it provides for immediate defensive action in a circumscribed area and for consultation among the signatories if a threat to their security arises elsewhere. The Pact does not speak of "aggression," and has therefore no need to define this term (as the Rio Treaty does), nor does it reproduce the Rio provision that a state cannot be required to use armed force without its consent. Such a provision is not wanted in the Pact, which does not provide, as Rio did, for the taking of majority decisions in regard to the applying of sanctions.

Article 5 of the Pact, which corresponds with Article 3 of the Rio Treaty, differs from it in referring expressly to the use of "armed force" for the purpose of assisting a victim of aggression. The obligation undertaken is, however, to use such force (or to take any action) if the state called upon to assist deems it necessary. In a White Paper issued at Washington on 19 March, it was explained that the commitment in Article 5 did not override and was not inconsistent with Congress' prerogative of declaring war.

To the extent that that constitutional right is safeguarded, the Pact falls short of providing for automatic military assistance. Nevertheless, that the United States should have gone as far as it has in the direction of meeting the European countries' demands for such assistance represents a revolutionary change from the traditional policy of isolationism.

Ideally, no doubt, it would have pleased those countries better if there had been a simple commitment to immediate intervention, as there is in the Brussels Treaty. But given the constitutional position in the United States, they can be considered to have obtained all that could reasonably be expected. American aid in arms can be counted upon in the situation in which that aid will be most sorely needed. That it would not be forthcoming in the event of a Russian attempt to crush a western European State is well-nigh inconceivable. The Pact will have been entered into precisely for the purpose of preventing such a possibility.

In certain circumstances, by no means unlikely, American armed aid should be forthcoming at once, on a limited scale. So long as any American military forces are in occupation of Germany and Austria, any Russian aggression directed against the other occupying Powers could not fail to embrace the American forces, and a state of war *de facto* if not *de jure* would result for the United States.

Indeed, a British Labor Party publication stated in 1948: "At the moment, Europe's most valuable military protection against aggression from the East are the few thousand American troops in Germany and Austria, because their presence would involve the United States immedi-

ately in any European war." The position would be different if the Russians moved against Norway, which could be invaded without the necessary involvement of American forces. In all cases, there would probably be some delay before a formal entry into hostilities by the United States occurred.

The moral is clearly that the non-American parties to the Pact must be ready to meet the first shock of a Russian assault by themselves. There is an implicit reminder of that necessity in Article 3 of the Pact, in which the signatories agree to take steps to "maintain and develop their individual and collective capacity to resist armed attack." The recommending of measures for implementing this Article, as well as Article 5, is expressly mentioned in Article 9 as a duty of the Defense Committee which is to be established under the Atlantic Council. The Committee will see to it that each country does its share in the common defense plan. Each may have to stand on its own feet when the first blow falls; all must be ready and there can be no waiting for allies.

Conclusions

However unwillingly, we have to face the fact that American participation in European defense spells not inviolability for the European parties to the Pact, but rather the certainty—so far as there can be certainty in human affairs—of ultimate victory in any war to which the Pact is applicable. The United States is, in fact, unconquerable in the long run. Any power which challenges her is bound to go down in the end. Yes, it may be said, but what if she is knocked out by atomic bombs? A few years ago a British professor warned her that five of the bombs could destroy the whole of the country south of the Mason-Dixon line and one could devastate all Illinois and Indiana. A much more modest estimate of the effect of the bomb is given by recent commentators and, in any case, no country but the United States, has a stock of the bombs. Apart from that monopoly, the United States has a general war potential so inexhaustible that the issue of any conflict in which she is engaged is a foregone conclusion.

That truth cannot be unknown to any potential aggressor whose action would be likely to draw the United States into the conflict. It should give him pause before he decides to strike in Europe, at any rate. If, as has been suggested, the Atlantic Pact is supplemented by other regional security schemes for the Mediterranean and the Pacific, with the United States as a member of each, the danger of a Russian move in those areas should be very substantially lessened. The policy of encirclement—of which Germany used to complain that she was the victim—will then have been adopted to curb the lust for expansion of a not less thrusting aggressor. The new name for it is "containment," but it is the old policy all the same, and by no means a bad policy. It would have prevented the late war if it had been pursued less half-heartedly and if Russia had not made her treacherous *volte face* a week before zero hour in 1939.

The Atlantic Pact, plus military aid, gives us strength—the willpower, manpower, and matériel—and strategically located positions from which to employ all these sinews of battle should the European peace be again disturbed by an aggressor.

Secretary of Defense Louis Johnson

Geographical Studies in Warfare

Translated and digested by the MILITARY REVIEW from an article by Professor Reynal in "Revue de Défense Nationale" (France) July 1948.

IN THIS age of total war, intellectual and scientific forces play an important role in attaining victory. To be sure, the military leader in all periods has been as important as the physical resistance or the quality of the weapons of the combatants. But the wars of the twentieth century expanded the headquarters sections, increased specialization and made even greater use of technicians. One of the most interesting aspects of this change has been the greater importance attached to geographical studies and their application to the military field.

Permanent Importance of the Problem

Geography has always influenced war. This is illustrated down through the centuries by the geographical names which have featured in successive battles.

In the wars which were marked by discontinuous fronts, the selection of important terrain features was influenced by natural communications routes or strong geographical positions. Now, the military geography factors are much more complex. With continuous fronts extending over hundreds of miles, a large unit may find itself assigned to a sector whose location is determined solely by factors influencing the general distribution of forces. Besides the traditional zones of operation, all kinds of other geographical zones are found. The problem, then, is for a particular unit to make the most of the terrain to which it has been assigned. A scientific and detailed study of this terrain is one of the factors which the command considers in order to gain an advantage over the enemy. Such a study may reveal operational possibilities which were unnoticed at first sight, but which may help to surprise the enemy.

Principles of Military Geography

There are two fields of effort into which the activities of military geography fall.

First, a great mass of information must be collected on the general geography of certain countries which are considered as possible theaters of operation of the future. In World War I, the French prepared booklets on the Rhineland, Belgium, Alsace and lower Germany, which were the work of the intelligence bureau of the National Defense Staff. By 1939, these works were out of date, being deficient as to routes, the geology of the terrain, and other things. But the information which they contained on railroads, hydrography, and distribution of population was still excellent. In spite of deficiencies, these booklets would have been of considerable service to the French First Army in 1944-1945, if it had not been almost impossible to find them in France after the occupation.

The Allies, on the other hand, had made use of important technical facilities. Among others may be mentioned the geological bulletins of the United States Army or the smaller works issued by SHAEF. These were scientific monographs on various subjects—studies of rivers, such as the Rhine and the Danube; geological and soil maps; technical studies of highway and railway routes. There were masses of figures, plans, and photographs emanating from authentic research centers. No military conclusions could be drawn from them, but, when distributed among the various units, these works provided information of great value in the functioning of intelligence and operations sections.

In the German Army, there was a like interest in such studies. From 1940 to 1943, the *Wehrmacht* high command published a series of short geographical

studies, some of which fell into Allied hands during the different phases of the advance. The originality of these publications, however, lay in the manner in which physical geography was closely related to strategy and tactics.

Of special interest, however, is the second category of works on military geography: the study of terrain in connection with the operations of large units such as the army or army corps. As such studies require a special form of instruction, the French and Allied commands were led to create "terrain" sections in certain intelligence sections in the field.

It is necessary to divide studies of this nature into two successive phases. During the first phase, when a unit enters a new sector or anticipates a movement along a particular axis, the "terrain" section presents a general study of the physical aspects of the country in which the unit is interested. This work emphasizes the general features of the terrain, such as relief, natural routes of communication or the nature of the soils, slope, quality of the soil and of the rocks, and the character of streams. These preliminary studies must be completed well before the operations begin.

Among geographical studies made by the French intelligence sections were the following:

1. The Abruzzes (French Expeditionary Corps, December 1943 and January 1944).

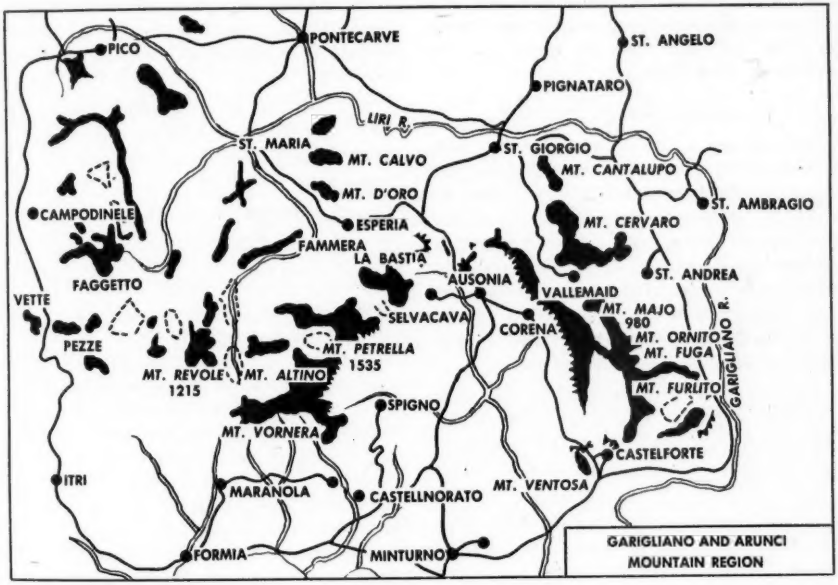
2. The Garigliano area and the Arunci Mountains (French Expeditionary Corps, April 1944).

3. Crystalline Provence, Maures area (2d Bureau of the First Army, June and July 1944).

4. The Belfort Gap (First Army, October and November 1944).

5. The Black Forest (First Army, October 1944 and March 1945).

All these studies had the dual aim of



informing the command as a basis for operational orders, and of serving as guides to small units responsible for executing the orders.

Once this work is completed, many details present themselves, and these are dealt with in the second phase. After a command determines its plan of operation, various problems created by the maneuver with reference to the terrain must be solved. For example, there are such problems as floods on terrain where armored action is contemplated in winter, or serious fires in dry and wooded areas in the summer.

Preparation for an Operation

During the latter part of March 1944, General Juin set up his command post at Sessa Aurunca, some 100 kilometers northwest of Naples and not far from the Garigliano River. The French Expeditionary Corps was given a few weeks in which to move its attacking units into the newly assigned sector. Its mission was to assist in the breakthrough at the Gustav Line and in the attack on Rome.

The "terrain" section of FEC had few technical means at its disposal, but it had team spirit, an enthusiasm for research, and ingenuity. In fact, the section found itself confronted with a region whose physical structure had been given little detailed study, even by the Italians themselves. There were no geological maps and only a few fragments of maps on a small scale. Three sources of information were used. First, there were maps furnished by the American services; these were old Italian maps worked over to a scale of 1:50,000 and 1:25,000, and they contained many errors and contradictions which were often hard to interpret. Second, there were aerial photographs, including excellent oblique views, which contained information of exceptional value and could be obtained on short notice. Third, there was direct observation, which was good.

Preliminary Study of the Sector

The French Expeditionary Corps sector was located entirely within the limestone area of the Apennine foothills, consisting of small *massifs* between the Abruzzes and the Tyrrhenian Sea. On the right, this mountainous area is separated from the central body of the mountains by a depression whose entrance is barred by the Cassino position—the valley of the Liri, with the Cassia highway or Italian National Highway No. 6. Thus, the French Expeditionary Corps was assigned almost entirely to a rugged zone which restricted movement.

Study of the terrain, which began the end of March and continued during April, showed three successive regions in the enemy area.

First, immediately above the Garigliano, was the Majo Massif. At its higher levels, the soil is essentially calcareous, and its irregular slopes resemble the North African *djebels*. The slopes lack symmetry and rise in a relatively gentle grade on the eastern (Allied) side in successive steps which afforded many advantages for the offensive. But the downward slope to the west and northwest is abrupt. As a result, the Majo controls the valley of the Ausonia better than it does the Garigliano, and this explains the determined German defense of the position from 11 to 13 May, and also the previous attacks to regain possession of the forward elevations.

The second zone begins beyond Majo to the west. This is a triangular depression which opens broadly on the south toward the sea. But it is dominated on the north by an amphitheater of elevations constituting the chain which joins Majo to the *massif* of the Petrella: Mount Calvo, the hills of Castellnuovo, and a spur of the Bastia.

Such positions would have been impregnable if they had been solidly held; it was

necessary to occupy them as soon as Majo was taken, in order to block the basin toward the north and permit penetration into the Petrella *massif* without fear of surprise.

The Petrella *massif* constituted the third zone. Altitudes here frequently exceed 1,000 meters, attaining heights of even 1,500 meters. The whole forms an area several kilometers in depth, with vertical walls on the eastern flank where the attack had to start. Thus, the region would have possessed the impenetrable character of high mountains if it had not had the characteristics of causeways in other places. Numerous flat-bottomed depressions with abrupt walls are sunk into the *massif*, and are joined to one another by gorges. Because of these, the whole of the Petrella is rendered more accessible.

At little cost to themselves, the Germans expected to use this mountain sector in defense of the route to Rome and to make their principal effort in the valley of the Liri. Early in April, General Juin decided to attempt an important attack in this zone, with the idea of rapidly enveloping the German forces who were defending the nearby depression. A series of two geographic problems resulted from this plan.

The most urgent problem was the location of pack-animal trails. These were the only possible routes over the Petrella *massif*, where the 4th Moroccan Mountain Division and the Algerian scout contingent, with artillery, were to attack. At first sight, the rocky walls presented an impenetrable obstacle, but detailed study of maps and photographs, together with bits of information secured from local inhabitants, revealed the existence of two systems of trails that could be used. These trails led along the valley side from depression to depression, finally joining in the Haut Polleca region, near Mount Revole. The latter thus became an objective of prime importance. From here, it was possible to proceed northward toward Esperia and the valley of the Liri, or to continue on as far as the Pico—Itri highway, according to circumstances. In short, the task consisted of making the best use of the transverse gorges of the mountain to outdistance the enemy, who was capable of moving out into the plain.

Thereafter, assuming the *massif* had been successfully crossed, the remaining problem was one of supplying the units with water for several days. This is very difficult in a semi-arid country with a highly permeable soil, especially when the weather is extremely hot in May and June. Sources of water in the *massif* had to be known in advance. Unfortunately, most of the sources of water were springs below an elevation of 700 meters. Higher up, the water sources were only temporary—either wells or cisterns. Every known source of information was investigated by the intelligence section: interrogation of Italian civilians, aerial photography, and the study of technical documents, particularly a hydrological bulletin published in 1942 by the Italian minister of public works. Little by little, a detailed picture of the points at which water could be obtained, and the necessary technical data was assembled. A map was prepared to accompany this document, and the information was distributed among the interested units 2 weeks before the operations.

By the afternoon of 11 May, when General Juin's order of the day was distributed to regiments and battalions, French military geography had played its part in the careful preparation for one of the finest operations in French military history. The troops were aware of the difficulties and obstacles which awaited them, but accurate knowledge enabled them to scale these mountains beyond which lay the road to Rome.

Antarctica

Digested by the MILITARY REVIEW from an article in the "Australian Army Journal" (Australia) February-March 1949.

THE current political claims of Latin American states and postwar resumption of exploration and research have drawn attention to the south polar regions and the adjacent island groups. The Antarctic Continent is the largest remaining unexplored land mass in the world. In size, it is between 4,000,000 and 5,000,000 square miles, an area larger than Europe. Surrounded by southern oceans, with the nearest land mass, South America, 750 miles from Graham Land, most of the continental area is unexplored and much of the coast is still uncharted.

New strategic ideas, such as the shortening of communications by trans-polar flights and the possibility of establishing long-range weapon bases, together with the world shortage of fats and oils and the search for strategic minerals, are the chief cause of increasing interest in the Antarctic.

Although not part of the Antarctic Continent proper, the adjacent areas of the Falkland Islands Dependencies—the South Orkneys, South Georgia, South Shetlands, and Graham Land—should be considered together with Antarctica because of their importance as the bases from which whaling and exploration have been mainly undertaken.

General Description

The general configuration of the Antarctic Continent is that of a large plateau which is permanently covered with an ice cap and which rises to 10,000 feet at the pole. The shore line consists of the inhospitable ice front of the great ice cap. In a typical 200-mile section of coast, 127 miles consist of ice varying from 5 to 50 feet in height, and 73 miles is rock of which beaches occupy a mere 3 miles. There are numerous glaciers, particularly in the Ross Sea area where they feed the great Ross Ice Shelf. This shelf is triangular in shape and occupies the southern end of the Ross Sea. It is 500 miles wide by 500 miles long, and the terminal face runs nearly due east and west in latitude 78° South. Here, it effectively bars the progress of ships because its height varies from 6 to 160 feet above the sea. The northern edge of the shelf is floating for most of its extent. The surface of the shelf is slightly undulating, but where it approaches land at the margins and where glaciers enter it, it is thrown into pressure waves 40 feet high and from 1 to 2 miles from crest to crest.

Various ranges and isolated peaks which have withstood the glacial erosion rise above the ice cap. Worthy of mention is Mount Erebus, an active volcano which rises to 13,000 feet on Ross Island.

While meteorological information is far from complete and consists mainly of data collected at irregular intervals from scattered points, it has been established that the entire Antarctic Continent lies within the permafrost area. The continent is subjected to severe winds throughout the year, although great variation in annual average wind velocity has been recorded. Some remarkably high wind velocities have been measured. Mawson, in Adelie Land in 1913, recorded a velocity of 107 mph for 8 hours with a maximum of 116 mph.

Apart from lichens and mosses, there is no known Antarctic flora, and consequently the land supports no higher animals. The seas, however, teem with life, particularly in the summer. This wealth of marine life, in particular the abundance of whales, is one of the principal factors that has led to the importance of the Falkland Islands and their dependencies. In addition, their position in relation to

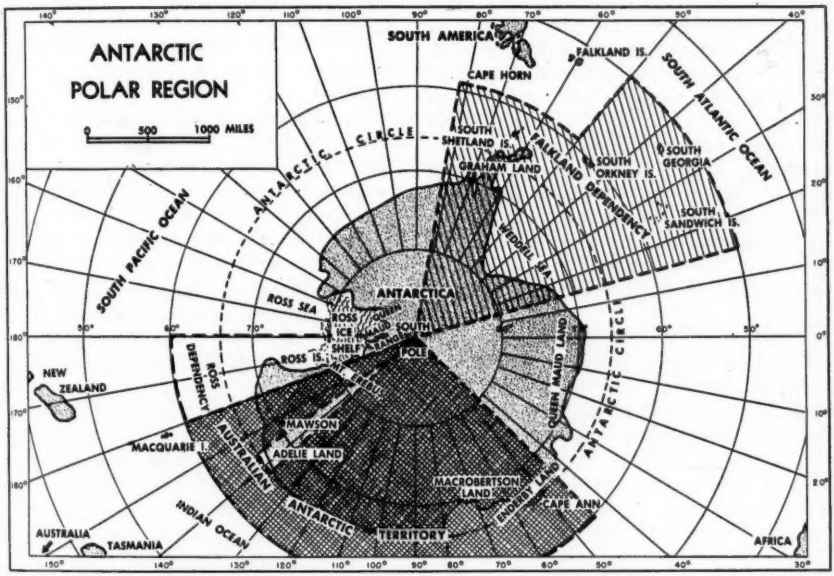
the Cape Horn route is of strategic significance. The Falklands are a crown colony with a population of 3,500 while the dependencies, also bleak and bare groups of islands, have only minor settlements, most of them seasonal only, consisting mainly of officials who assist the whaling fleets.

Exploration and Research

The French were the first to send ships to far southern waters, but their first expedition under Kerguelen in 1772-1773 did not penetrate the polar seas far enough to discover land. Captain Cook encircled the Continent during his five voyages in 1772 to 1775, crossing the Antarctic Circle (66° 30′) three times, and discovered South Georgia and the South Sandwich Islands, but not the main land mass.

The first discovery of Antarctic land was made by Captain Briscoe, commander of a whaler belonging to the Enderby Brothers of London, who sighted Cape Ann in Enderby Land in 1831. In the next few years, French, American, and British government and private expeditions explored the area and discovered various portions of the Continent, chiefly Adelie Coast, the Weddell Sea, and Ross Sea. After this, there was a lull in Antarctic exploration until the twentieth century.

The early 1900s saw the most famous period of Antarctic exploration, culminating with the Amundsen and Scott expeditions to the South Pole. Interrupted by World War I, exploration was resumed in the late 1920s with better equipment, including aircraft, leading to the mapping of hitherto inaccessible territory. Principal expeditions in this period were the British Australian and New Zealand Antarctic Research Expeditions of 1929-1931, nine Norwegian expeditions, Rear Admiral Byrd's three voyages, discoveries by Sir Hubert Wilkens and Lincoln Ellsworth,



and a German expedition in 1938-1939. These expeditions covered MacRobertson Land, Queen Maud Land, and the area now known as Australian Antarctic Territory, and included Byrd's and Ellsworth's Polar flights.

A number of expeditions in the post-World War II period have been made or are in progress. The biggest so far has been the United States fleet exercise of 1946-1947 which employed a task force of 4,000 men. Although undertaken primarily as a naval exercise in cold areas, considerable topographic and scientific work was also carried out. Currently, the United Kingdom government is maintaining survey parties in the Falkland Island dependencies, and during the past season the Australian vessel *Wyatt Earp* surveyed part of the Australian Antarctic coastline. Australia also has scientific parties on Heard and Macquarie Islands. Chile and Argentina have weather stations in the Falkland dependencies.

Economic Aspects

The present economic importance of Antarctic derives almost wholly from whaling, the output of whale oil having an annual average of some 400,000 tons, with a value running into millions of dollars. It is interesting to note that no nation made any definite claim to Antarctic territory until the development of whaling in southern waters showed that, however poor the land itself might be, Antarctic waters were very valuable areas. In the years before World War II, 70 percent of the whale fishing in the world took place either near Graham Land or in the vicinity of the Ross Sea. At present, the whaling season is restricted to the period December-April and the total number of whales which may be killed annually is limited to 16,000.

Large deposits of coal have been discovered in the Antarctic, mainly in the Queen Maud Range, but under present circumstances their economic value is small.

With vast areas of the continent still unexplored, and only limited geological data available for the areas which have been traversed, it is possible that other minerals, including uranium and other radioactive ores, in sufficient quantities to be of economic or strategic importance, exist in Antarctica.

Territorial Claims

Lack of clear geographic boundaries in the polar areas led to the adoption of the "sector" method whereby claims are delineated by a south latitude and two meridians.

The possession of Antarctic areas which have been claimed for many years by the United Kingdom is now being disputed and the legality of Antarctic possessions by the various powers may yet have to be decided by some international authority.

Existing claims are as follows:

1. France claims Kerguelen Island and Adelie Land (the latter between 136° 20′ E and 142° 20′ E). These territories are controlled through the Governor of Madagascar.

2. Norway claims Queen Maud Land, lying between 16° 30′ W and 49° 30′ E. Proclamation of this claim was made in 1939 and formally recognized by the United Kingdom government.

3. British Empire claims are as follows:

a. Australian Antarctica, from 49° 30′ to approximately 160° E, less Adelie Land.

b. New Zealand Antarctica, from approximately 160° E to approximately 150° W.

c. Falkland Islands Dependencies, covering the Weddell Sea, Graham Land, the South Shetlands, the South Orkneys, South Georgia, and the Sandwich Group, and includes all areas south of 50° S between 20° W and 50° W, and south of 58° S between 50° W and 80° W.

4. Argentina claims an area almost identical with the Falkland Islands De-

pendencies. Argentina also lays claim to the Falkland Islands proper.

5. Chile claims an area bounded by 53° W and 90° W. This partially overlaps Argentina's claim, but the two countries signed an agreement on 4 March 1948, to cooperate in "defense of their rights."

Despite claims by American explorers, the official attitude of the United States government is that it makes no claim to any Antarctic area, but neither does it recognize claims by other countries. The US State Department reserves its position in all Antarctic matters.

In the past, territory which, at the time of discovery has been unoccupied, has been acquired by occupation. What has been required to establish "occupation" has been as follows:

1. An official unambiguous expression of the intention of the occupying power to the effect that it has acquired the territory as its own and intends to hold it.

2. Effective physical possession and the establishment of an administration.

Now, however, developments in international law are such that little weight is given to discovery, and the necessity for continuous physical possession and administration is becoming greater. Also, some stress is being laid on geographic proximity to the claimant state. However, there are no precise rules on the allocation of territories. In many cases in the past, the ruling authority has often been satisfied with very little support to a claim of sovereign rights, provided the claim was uncontested or that no other claimant could make out a better case.

Conclusion

The increased interest in the Antarctic has produced a situation wherein clarification of rival claims will become necessary. The method by which this will be attempted is a matter of conjecture. Some bilateral discussion between the states involved is likely to be sought. The reference of the matter to the United Nations is a possibility, but fraught with some difficulties, since such a reference might bring Soviet interest into the arena, which the parties concerned would not welcome. An alternative might be multi-state control by the states which already have claims in the South polar areas.

Wars heretofore have been fought generally east and west around the globe. We think that in the future they are more likely to be fought over the top of the world, at least in the initial phases.

General J. Lawton Collins

Finnish War Lessons

Translated and digested by the MILITARY REVIEW from an article by Lieutenant Colonel G. von Salis in "Allgemeine Schweizerische Militarzeitschrift" (Switzerland) March 1949.

FINLAND encountered great difficulties in building up her Army after 1918. Since it was clearly apparent that her probable enemy was becoming increasingly strong, delaying action tactics were emphasized in Finnish regulations. However, in order

to maintain and strengthen the Army's spirit of resistance, methods of conducting offensive operations were also outlined. It was emphasized in these regulations that attack in open terrain was to be avoided. Encirclement of the enemy through woods was to be attempted. Ski troops are best suited for combat in woods, hence, Finland attached great importance to the training of skiers. The boat-shaped Ahkio sleds proved their worth as a transportation device in winter combat. The Finnish people had an unshakable faith in the Army's ability to protect the country.

In contrast to the Finns, the Russians possessed a considerable amount of modern war experience. It is true that during the first years after the revolution of October 1917, the officers of the Red Army were insufficiently trained. In addition, continuity of command had been broken by the disappearance of most of the czarist officers. Hence, the Russian regulations of 1929 were defective. Those of 1936 showed improvement. But the Russians either followed their regulations too literally or not at all. For example, Russian regulations emphasize the importance of night activity. In spite of this, however, the Russians fighting in Finland completely halted all activity at nightfall.

The Finnish regulations, on the contrary, were to serve only as guides. In practice, this worked out very well, since the Finn is a decided individualist. While the Finns regarded winter as their ally, the Russians considered snow and cold hinderances to combat.

Both Finns and Russians agreed on the importance of a strong spirit of aggressiveness, the value of encirclement, and the necessity of making an effort to annihilate the enemy.

At the beginning of the Finnish-Russian War, the Finns had 9 divisions of 14,200 men each, 40 tanks, and 150 planes. The Russians had 30 divisions of 17,500 men each, 2,000 tanks, and 2,000 planes, with 800 of the planes in the front line. Not until after the war had started did the Finns obtain a small number of 37-mm antitank guns—one or two per battalion. The Finns had no modern signal communication equipment.

The fighting in Kannas began during the first half of December 1939 with a delaying battle. During this action, the Finns learned valuable lessons, especially

with regard to antitank fighting. They dug one-man foxholes and allowed a Russian tank to roll over the hole before action was taken against it. Similar protective holes were also dug for horses.

The Russians were masters of the art of digging in and of camouflage. The danger from rumors during this period was very great. The advance of the Russians was poorly organized.

During winter training maneuvers in 1942, a Finnish infantryman demonstrates individual camouflage and the throwing of a hand grenade from a snow pit.—US Army photo.

Initial Attacks

The initial fighting took place in the main Finnish line of defense—the Mannerheim Line. This defensive line was far from coming up to the standard of the Maginot Line. The principal strong points were on the western end, consequently the Russians shifted their main effort to that point. The line was about 78 miles long and was defended by 6 Finnish divisions with 1 division in reserve. The first attacks of the Russians were ludicrous. They were unsuccessful and costly.

The Finnish counterattack of 23 December resulted in failure. One of the main reasons for this failure was the improvisation and lack of thoroughness in preparation. The Finnish troops entered the assault positions tired from long night marches. No proper point of main effort for the attack was designated nor was any reliable reconnaissance undertaken before the attack. The Russian troops were also in poor physical condition, so Finnish success was entirely possible if the proper preparations for the attack had been made.

After the unsuccessful Finnish counterattack, 5 weeks passed during which the Russians prepared for their next large-scale attack. The Finns used this time to reinforce their defensive positions and to prepare their positions in depth. The Russians launched probing attacks time after time during this interval in order to learn the best method and route for their main attack. They gave the Finns no rest, day

or night. While artillery fire was only harassing fire at first, it became more concentrated from day to day. Fire direction was often taken over by Russian airplanes. The Finns could move only at night and they were unable to heat their shelters during the day because the smoke would reveal their positions.

The Russian attack began on 1 February with no regard for Russian losses. After each division had attacked three times on three successive days, it was replaced by a fresh division. When the Russians succeeded in effecting a breakthrough at Summa on 16 February, the Finnish troops were drawn back to a line before Viipuri. The Russians were unaware of this withdrawal at first. The battles before Viipuri, characterized by powerful Finnish counterattacks, lasted until the signing of the truce on 13 March 1940.

On the Karelian Isthmus, the Russians' superiority in war matériel and men became more and more evident with the passing of time. In spite of their determined stand, the Finns were forced to yield to increasing pressure. However, superior Finnish tactics produced excellent results north of Lake Ladoga. The Russians pushed ahead in several columns over the few through roads. Some of these columns were of division strength. The Finns very skillfully attacked these individual columns from all sides, breaking them up into small formations and surrounding them. Once encircled, the Russian troops were starved out. The Finns were all equipped with skis, were familiar with the woods, and were good rifle shots. On the other hand, the Russians feared the woods and were not equipped with skis or sleds. The Russians did show that they were determined fighters, and they repeatedly attempted to break out of the encirclements.

In the battle at Lemetti northeast of Lake Ladoga, a Russian division and an armored brigade were split up into 10 small formations which were then annihilated. At Tolvajarvi, however, complete encirclement was not achieved. Nevertheless, the Finns annihilated a Russian division there and repulsed an additional division, pursuing it some 25 miles.

In the fighting at Raate, the Finnish forces, consisting of 11 battalions and 2 batteries which had been victorious at Sumomussalmi, annihilated the remains of the Russian 163rd Division. After that, the Finns fought the Russian 44th Division, and it, too, was wiped out a few days later.

Finnish Offensive

After the winter war, the Finnish Army was reorganized on the basis of the lessons learned. The tenseness of the situation made it necessary to maintain two annual classes in service and to construct a defense line along the southeastern frontier. Part of this line was 12 miles from the frontier, other parts being 63 miles back. Shortly after the second outbreak of the hostilities between Finland and Russia in June 1941, the Finnish Army command decided to go on the offensive. They wanted to establish the front west of Lake Ladoga, as far forward as the old 1939 frontier, and to the east of this lake, as far forward as the Svir.

The fighting on the Karelian Isthmus was ended in 3 weeks. It was conducted in accordance with the plan which had been made and the Finns reached the objectives outlined. The pincers operation south of Viipuri and Vilborg, in which the 8th Division was transported across Viipuri Bay in boats, was an especially interesting operation in this fighting. The Russians suffered a severe defeat there and the Finns captured a great deal of war matériel.

The fighting for East Karelia stretched over a much greater period of time—from 10 July to 8 December 1941. Here also, the Finns reached their objectives, the Syvari and the Svir in the south and the

cities of Aanislinna (Petroskoi) and Karhumaki on Lake Onega.

In northern Finland, German and Finnish formations usually were fighting side by side. In the Petsamo area, the German "Norway" Mountain Corps, with the 2nd and 3rd Mountain Divisions, was engaged without Finnish troops. The determined resistance of the Russians in terrain which was favorable for the defender prevented the Germans from reaching Murmansk and the Murmansk railway, the assigned objective.

From 1942 to 1944, the Finnish fronts remained unchanged. Positional warfare developed which was characterized by scattered, local assault force operations. In the summer of 1944, the Russians brought up reinforcements and began to launch heavy attacks. On 8 June, they succeeded in breaking through the Finnish defense line on the Karelian Isthmus, and the Finns were forced to fall back little by little to the prepared line south and east of Viipuri. Afterwards, however, the Finns were able to hold a line north of Viipuri until the signing of the armistice.

The line on the Syvari and the Svir also failed to hold against the heavy Russian attacks. East Karelia was evacuated by the Finns and a line was occupied which extended 35 miles northeastward from the northeast corner of Lake Ladoga and then veered to the north.

According to the terms of the armistice, the Finns had to force the Germans to make a rapid withdrawal from the province of Lappin (Lappland), under penalty of having all of Finland occupied by Russian troops. And so, at the end of September 1944, fighting began against the German troops which were moving back to Norway. The Germans defended themselves stubbornly. While retreating, they destroyed all dwellings in their path and blew up or burned more than 1,000 highway and railway bridges. Vast areas were also mined by the Germans.

The second Finnish war cost Finland 55,000 dead and 44,000 wounded.

JM

Supply Problems in New Guinea

Digested by the MILITARY REVIEW from an article by Major A. M. Clark Hutchison in the "Journal of the Royal United Service Institution" (Great Britain) February 1949.

IN SEPTEMBER 1942, the Japanese advance towards the southern coast of New Guinea was halted 25 miles from Port Moresby. Thereafter, the Japanese were slowly but steadily driven back over the Owen Stanley Mountains to Buna and Gona. While this was happening, it became evident that the Japanese command was contemplating a second thrust southwards from Lae and Salamaua, two of their bases on the north coast, towards Wau. By capturing Wau, they hoped to use the airfield for raids on Port Moresby and as an advanced base for a further push southwards, at the same time denying Wau to the Allies. In furtherance of this aim, the Japanese approached close to Wau in January 1943, and were on the point of taking it.

To counteract this, the Allied command flew an Australian brigade group into Wau to reinforce the numerically weak commando units in the area. This force secured Wau and advanced northwards to Salamaua to draw off as many Japanese as possible from Lae and Salamaua. After this, a sea landing could be effected near Lae to attack the Japanese in the rear, capture his bases, and open the way for further moves northwards. The plan was successful.

To appreciate the problems of supplying

the brigade group and additional troops which arrived later during the 6-months' campaign, the reader must understand that the force was maintained entirely by air from Port Moresby, the main Allied base in New Guinea at the time. There were no land communications between Wau and Moresby, and communication was by radio only.

From Wau northwards, there was only one road. This ended 1½ miles from the township. The Japanese had advanced by native trails, or trails hacked out of the jungle by themselves. Deployment was restricted owing to the nature of the country—high mountains, deep precipitous valleys and ravines, and forests and thick jungle growth. All these features combined to prevent the use of animal transport. The only feasible methods of supply were direct dropping over the troops forward of Wau and landing stores on the airfield and moving them up by native carriers.

Native Carriers

The natives were small but sturdy, spoke a form of pidgin English, and were remarkably loyal to the Australians. There were few cases of their voluntarily assisting the Japanese by offering information or manual labor. They were largely uneducated, although many had come in contact with missionaries. Their normal expectation of life was about 40 years. The natives were recruited from various tribes by the Australian and New Guinea Administrative Unit (ANGAU), which mainly comprised officers and men who had lived in the island before the war and understood the local inhabitants. ANGAU also supervised their pay, rationing, medical attention, and organization into carrier lines, and gave assistance and advice to the staff on any problems connected therewith. Pay was roughly 10 shillings per month and an occasional issue of a new "lap-lap," a brightly colored cotton garment similar to a loin cloth. Food consisted of local products, rice and oatmeal, and each man was regularly given a stick of strong twist tobacco which he cut and rolled into cigarettes, very often using newspaper for the purpose.

The natives were divided into companies or "lines," each "line" being stationed at a staging post on the line of communication from Wau along the axis of advance. As our troops moved forward and pressed the Japanese back, new staging posts were added at suitable points.

A staging post usually included an Army Service Corps (ASC) store, accommodations for wounded men and others moving up or down the track, and quarters for the native carriers. The living quarters were made of a timber frame, surrounded and covered by sisalcraft as protection against the rain.

At first, about 600 natives were employed, but as the advance progressed and additional troops were moved in, the numbers grew to more than 900. Each day, a loaded line moved forward to the next post, returning the same day empty-handed, the time averaging 7 hours for the round trip. Forty pounds was the maximum any one man could carry. This weight was set because of the difficulties of movement over the steep rises and descents, the mud, and the rain. These restrictions complicated the supply problem, as the number of natives available was seldom equal to the amount of supplies to be taken forward, and priorities had to be laid down.

If there were wounded men to be evacuated to Wau for air transport to the base, natives had to be sent up the line without a load to carry the stretchers back. Carrying loads each way was too great a strain. A stretcher case often required 12 natives, four to carry and two reliefs of four. These men had to be deducted from those available to take supplies forward. In addition, provision had to be made for natives getting sick and for much-needed days of rest.

Each day when the natives were collected and told to pick up their loads which had been prepared for them, they invariably scrambled for the smallest packages. They always failed to realize that a small box of ammunition might weigh the whole 40 pounds, while a tin of biscuits, although more bulky, weighed only 26 pounds. Then the line moved off, generally under two escorts as some protection and as a precaution against thieving. Theft seldom happened, as the New Guinea native is reasonably honest.

Usually, the system worked well, but sometimes the unexpected happened, generally in the forward area. The native, although personally quite brave, did not like bombing or artillery fire. If he found himself near either, he sometimes disappeared for 24 hours or more. This meant that a complete carrier line might disappear and not be available for the next day. On the other hand, he did not seem to mind small-arms fire. Later on, he became more used to bombs. Fortunately, we had air superiority, and the two mountain guns the Japanese possessed were captured early in the campaign. It is interesting to note that our own mountain guns, also two in number, were 3.7-inch howitzers of pre-World War I vintage, and they did sterling work. Moving them up was a severe task, and the battery concerned was given 50 natives for each gun to assist in the moving.

In general, therefore, the native carrier method of supply presented the staff with the following problems and abnormalities:

1. The inadequate number of natives available, although additional ones were constantly recruited.

2. The necessity, and often the extreme difficulty, of deciding the priority of supplies. Priorities varied from day to day according to the vicissitudes of the campaign.

3. The fact that the native could carry only 40 pounds one way. To bring down wounded men or damaged stores, the carriers had to go forward without a load.

4. The occasional unreliability of a "line" if shells or bombs were falling in the vicinity.

5. The difficulty of signal communications. Wireless was normally adequate, but the telephones along the line of communications from Wau to the forward units frequently failed because of falling trees, other breakages, weather, and faint reception.

6. The natives' strong objection to carrying Japanese wounded. The number of Japanese prisoners, wounded or otherwise, was small. Special escorts had to accompany natives carrying enemy wounded, as there was a tendency to throw them over a cliff or kill them by other means.

7. The continual need to reduce the time lag between the time units requested supplies and their delivery. For example, when the front line was 25 miles or so from Wau, the time lag was approximately 4 days.

Once progress north of Wau had been made, it was obvious that the forward troops—usually one battalion with a second one in support along the line of communication, together with supporting units—could not be maintained by native carriers alone. Numbers and time did not allow this, and attention was directed to the supplementary method of air dropping.

Air Dropping

New Guinea was among the first battle areas in which the dropping of supplies from the air was practiced. Early in 1943, the technique was still undeveloped. Much had to be learned by trial and error. At first, the drops were free, *i.e.*, without parachutes. The aircraft used were C-47s, piloted and manned by Americans, but with Australian "droppers." They were loaded in the early morning at Port Moresby in accordance with requests radioed by the headquarters supply staff. The planes would then fly to Wau, where a certain

Because of high mountains, deep valleys, forests, and jungle, native carriers had to be employed in supplying troops during the New Guinea campaign in 1942. The maximum load of a carrier was 40 pounds, one way. Returning, the carriers came empty-handed, requiring 7 hours for the round trip.—US Army photos.

Evacuation of the wounded from the forward areas in New Guinea was a difficult task. Carriers went forward without loads; stretcher cases (above) often required 12 natives, four to carry and two reliefs. Planes were used (below) to bring the wounded from the hospitals in the vicinity of combat back to Port Moresby.—US Army photos.

number landed and unloaded. The remainder went on to the dropping grounds. At these points, the aircraft, usually four or five, circled low. Each time the pilot judged the moment was right, he switched on a red light in the body of the plane. Meanwhile, the droppers had arranged the cargo in lots near the open door, and on the appearance of the red light, they either pushed the stores out by hand or lay on their backs and kicked them out. The dropping grounds were just clearings in the jungle at appropriate spots and were very small.

After the goods were dropped, they were collected by natives under ASC supervision, stored, and subsequently issued. Later, parachutes were introduced. This method insured a much better "recovery" as well as giving a wider range of articles which could be dropped.

Dropping of supplies by air in the jungle is not simple. Its difficulties and peculiarities as they affected the supply staff may be briefly summed up as follows:

1. Weather. In New Guinea, clouds, mountain mists, and rain are regular features of the climate. Morning flying and dropping could usually be undertaken, but there were many days when weather conditions did not permit.

2. The threat of enemy fighter planes. C-47 transports were easy targets and consequently had to be protected by fighter aircraft. The latter had a limited range, which meant that transports landing at Wau could not stay long unloading, nor could the others delay when engaged in dropping. Accuracy may occasionally have suffered from this fact.

3. Limitation of the type of supply. Liquids, certain types of ammunition, and fragile stores could not be dropped free, and very often not even by parachute.

4. Breakages and losses. A certain proportion of the items and packages dropped either broke on landing or else fell away from the open space of the dropping ground into impenetrable jungle or into Japanese hands. This proportion varied daily, generally being about 20 percent, but on occasion it reached as much as 65 percent.

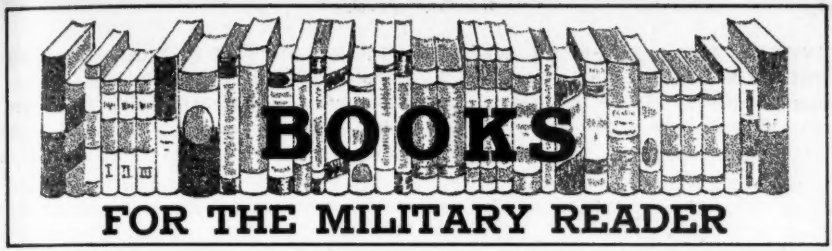
5. Pilot's skill. The standard of recovery depended greatly on the skill of the various pilots.

Thus, daily supply maintenance was always uncertain and the means of effecting it was precarious. The task of building up reserves was long, and more than once they reached a dangerously low level.

The Wau to Salamaua part of the New Guinea campaign is of interest because, for the first time in war, sizeable forces were maintained from their base entirely and exclusively by air for months on end. Many of the lessons learned were later put to good use in other Pacific areas and in Burma. In addition, the way in which the native carrying organization took over the functions of first and second line transport is a fascinating study in itself. Much credit is due these men who worked so faithfully, often at considerable cost to themselves.

A real knowledge of supply and movement factors must be the basis of every leader's plan.

Field Marshal Wavell



GUADALCANAL: THE FIRST OFFENSIVE. By John Miller, Jr. From the series, *The United States Army in World War II*, edited by Kent Roberts Greenfield. 413 Pages. Illustrated; 36 maps. Historical Division, Department of the Army, Washington, D. C. $4.00.

When the Joint Chiefs of Staff in July 1942 ordered a "limited offensive" against the Japanese in the Pacific, the purpose was to halt the enemy's advance against the tenuous American supply line to Australia, to wrest the initiative from the enemy, and to provide a base for future operations.

Guadalcanal was chosen as the initial landing ground of this offensive, and there, between August 1942 and February 1943, the first offensive by American ground forces in World War II took place.

Guadalcanal: The First Offensive is the Army's official history of the capture of that island. It covers the initial landings by the 1st Marine Division on 7 August 1942, the vigorous Japanese reaction, the reinforcement by the 2d Marine, the Americal, and the 25th Infantry Divisions, and the final smashing of Japanese resistance by XIV Corps in February 1943. While most attention is given to the ground action, the supporting air and naval operations are handled in some detail.

The strategic situation leading up to Guadalcanal is outlined in the first chapter of the book. Most of this chapter will be familiar to readers of the MILITARY REVIEW, for a large part of it was the basis of an article by Dr. Miller which appeared in the December 1948 issue under the title of "Prelude to Offensive Action in the Pacific." Another chapter deals with the plans for the invasion.

The author has drawn on many new sources of information, and of particular significance are the extensive Japanese documents pertaining to the operation. The book points up the perilously small margin of error on which the American forces were forced to operate, the lessons the American forces learned, and the errors as well as the successes of the campaign.

RUMANIA UNDER THE SOVIET YOKE. By Reuben H. Markham. 601 Pages. Meador Publishing Company, Boston. $4.00.

This book, by a journalist with many years experience in the Balkans, describes what happened to Rumania when it was taken over by a communist minority. There is a review of the background of the Rumanian nation and people and a detailed account of the tangled events in the country during World War II. The major portion of the book, however, deals with events around March 1945, when the Rumanian government was handed over to four communists. Only 5 years before, the communist party had numbered only 1,000 in a country of 20 million inhabitants. The book records the religious persecution, suppression of minorities, subjugation of Rumanian nationality, and terror that had been Rumania's experience through 1948.

CIVILIAN MORALE UNDER AERIAL BOMBARDMENT, 1914-1939. By Hilton P. Goss. 264 Pages. The Air University, Maxwell Air Force Base, Alabama.

The Air University has issued in mimeograph form a comprehensive study of pre-World War II aerial bombing and its effect on civilian morale. Dr. Goss, the author, finds that up to 1939 there was a certain similarity in the general reactions of survivors to bombing from the air. "These reactions," he reports, "appeared to show that the human mind and the human character could absorb an amazing amount of physical punishment without giving way under the impact." "After the lessons of World War II are examined," he adds, "it may be possible to predict with a degree of psychological exactness the lines beyond which individual and national morale may succumb to aerial bombardment of cities. It does not appear from the experiences prior to 1939 that any such prediction was tenable when the Nazis moved against Poland." The study covers the following: World War I; the peace between two wars; air warfare in the Gran Chaco and Abyssinia; the Far East, 1931-1940; and the Spanish Civil War, 1936-1939. An extensive bibliography is included.

THE ROME-BERLIN AXIS. A History of the Relations Between Hitler and Mussolini. By Elizabeth Wiskemann. 376 Pages. Oxford University Press, New York. $5.00.

The Rome-Berlin Axis is a documented analysis of the alliance fashioned by the two former chiefs of the Italian and German States. While the outline of the Axis objectives of property, power, and prerogatives is already well known, the author adds to this record much new material that has been revealed since the end of World War II. This new material includes official records and the accounts of numerous participants.

REPORT ON THE GREEKS. By Frank Smothers, William Hardy McNeill, and Elizabeth Darbishire McNeill. 226 Pages. The Twentieth Century Fund, New York. $2.50.

The three authors of this volume constitute a team of investigators sent out by the Twentieth Century Fund in the spring of 1947 to investigate conditions in Greece. This book is the report of that investigation. It presents a close-up picture of Greek living conditions, customs, governmental organization, geography, population and health, and the effect the civil war is having on the nation as a whole.

PEACE OR PESTILENCE. By Theodor Rosebury. 218 Pages. Whittlesey House, New York. $2.75.

This book gives a picture of how germs may be used as weapons of war. While humans are usually considered the objective of bacteriological warfare, the author points out that the target may also be the animal or plant life on which a nation's war economy depends. In addition to well-known epidemic diseases, germs may be altered by methods of culture to produce entirely new diseases. One feature of biological warfare, the author points out, is its relative cheapness; any nation, large or small, with simple laboratory facilities, is capable of launching such warfare. The best defense, the author says, is the threat of retaliation with similar weapons, as it is impossible to take adequate defense measures until after a germ offensive has been launched and a particular disease has been identified. Knowledge of vaccines and various new drugs reduces the likelihood that a biological warfare attack on the United States would cause a disastrous epidemic with great loss of life, the author believes. But the constant threat of such an attack might keep civilian morale on the verge of panic.